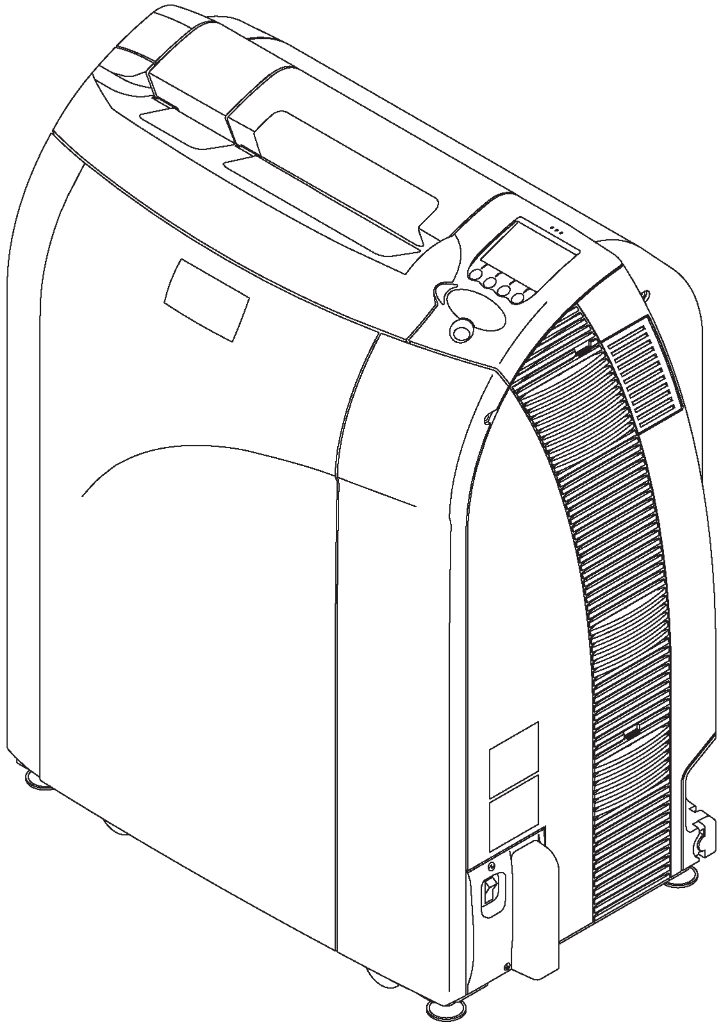
FUJIFILM

FUJI COMPUTED RADIOGRAPHY

FCR CAPSULA X/FCR CARBON X

CR-IR 357

Service Manual



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The relationship between mR (milliroentgen), which is the unit of radiation, and μC/kg (micro-coulomb/kilogram), which is the SI derived unit of radiation, is as follows.
1 mR = 0.258μC/kg

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1. Handling of This Manual

1.1 About This Manual

■ Scope

This Service Manual is applicable to Fuji Computed Radiography CR-IR 357. The machine is categorized as Class 1 according to IEC classification.

■ Notation of Unit Symbols

For notation of unit symbols, metric units set forth in the International Systems of Units (SI) are used, as a rule. However, metric units that are allowed in the Measurement Law, not in the SI, are used in some cases.

1.2 Precautions for Handling of This Manual

1. **Fuji Photo Film Co., Ltd reserves all rights related to this manual.**
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3. **Since this manual contains confidential information of Fuji Photo Film Co., Ltd, such as the internal structure of the product, appropriate measures should be taken to prevent illegal or inappropriate disclosure and/or use of this manual.**
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5. **Portions of the descriptions in this manual may be revised due to improvements on the product.**

1.3 About Notation in the Manual

■ Notation of cautions, warnings, etc.

The notation formats of "warning", "caution", "Instruction", "note", and "reference" are shown below.

⚠ ***WARNING***

Used when death or serious injury may occur if the instruction is not observed.

⚠ ***CAUTION***

Used when minor or medium levels of physical injury may be incurred if the instruction is not observed.

Also used when the machine may suffer serious trouble (such as unrecoverable or difficult-to-recover trouble).

◆ INSTRUCTION ◆

Used when the machine may suffer damage, or any failure or malfunction may occur, if the instruction is not observed.

◆ NOTE ◆

Used to indicate the matters that need attention during steps of the procedure.

◇ REFERENCE ◇

Used to indicate terminology or supplemental explanations.

■ Indication of Refer To

The "☞" mark is used to indicate the chapter or section you should refer to.

Its format is as indicated below.

☞ **{MC:5.1_Cassette Set Unit}**

■ Notation in the Manual

In this Service Manual, the CR-IR 357 is sometimes denoted simply as the RU (Reader Unit), and the CR-IR346/348CL as the CR Console.

■ Notation of Symbols

- Check/Adjustment indicator: Indicates that it is necessary to check or adjust the installation location when the part or component removed is to be reinstalled.

  CHECK1

  This indicator is placed in the illustration that depicts the procedures for removing the parts and components.

  When you see this indicator, refer to its relevant "■ Check/Adjustment Procedures."

- Half-punch indicator: Indicates that it is necessary to align the half-punches when installing the parts or components.

  However, it is not indicated for the half-punches for improving ease of assembly or preventing erroneous assembly procedures.

■ Servicing Instruments and Tools That Require Inspection/Calibration

The machine should be installed and serviced by use of servicing instruments and tools that have been inspected and calibrated as appropriate.

If the machine were serviced using servicing instruments and tools that have not been inspected and calibrated, proper performance of the machine could not be guaranteed.

Servicing instruments and tools that require inspection/calibration are as listed below.

Inspection/calibration procedures should be performed in accordance with the inspection/calibration manuals described in the ECN Information.

● Instruments and tools that require inspection/calibration

Name	Inspection	Calibration	Servicing instrument inspection/ calibration manual No.
Dosimeter	-	○	FF-001
Steel rule (150mm)	○	-	FF-005
Steel rule (300mm)	○	-	FF-006
Digital tester	○	○	FF-012
Calipers	○ (✻)	-	FF-015

✻: A block gauge for use in inspection requires calibration.

CR-IR 357 Service Manual - Contents

Safety Precaution

1. Safety Precautions Safety-1

1.1 General Precautions Safety-1
1.2 Precautions Against Laser Radiation Safety-2
1.3 Precautions on Patient Environment....................................... Safety-2
1.4 Precautions in Retaining the Machine..................................... Safety-3
1.5 Notes on Supporter Use... Safety-3

2. Labels Safety-4

2.1 Laser Precaution Labels Safety-4
2.1.1 Laser Precaution Label Attachment Locations Safety-4
2.1.2 List of Laser Precaution Labels Safety-5
2.2 Ratings Indication Labels Safety-6
2.3 Handling Instruction Labels and Attachment Locations Safety-7
2.3.1 Cassette Set Unit Safety-7
2.3.2 Erasure Unit Safety-7
2.3.3 Side-Positioning Conveyor Unit...Safety-7
2.3.4 Subscanning Unit Safety-8
2.3.5 Light-Collecting Guide Safety-8
2.3.6 Scanning Optics Unit...Safety-8
2.3.7 Covers Safety-9
2.3.8 Cassette Insertion Operation Label, Cassette Right-Justifying Label...Safety-9
2.3.9 Lead Precaution Label Safety-10
2.3.10 Power Cable Caution Label...Safety-10

3. Protective Housings Against Laser Exposure Safety-11

4. CLASSIFICATION Safety-11

5. Cautions on Electromagnetic Waves Safety-12

5.1 Electromagnetic Compatibility (EMC) Safety-12
5.2 Further information for IEC60601-1-2:2001 .... Safety-12

Product Specifications

1. Specifications of Machine Spec-1
1.1 Product Code.. Spec-1
1.2 Available IP Sizes and Types Spec-1
1.3 Available Cassette Types and Sizes... Spec-1
1.4 List of Optional Items Spec-1
1.5 Product Specifications Spec-2
1.6 Dimensions, Weight, and Center of Gravity Spec-2
1.7 Moving Means for the Machine Spec-3
1.8 Retaining Means for the Machine Spec-3
1.8.1 Retaining the Machine on Adjustable Feet.......................................Spec-3
1.8.2 Retaining the Machine by Use of Anti-Topple Retainer Spec-4
1.9 Environmental Conditions.. Spec-5
1.10 Electrical Specifications Spec-5
1.11 Servicing Space Spec-6
1.12 Installation Space... Spec-6
1.12.1 For Fixing by Adjustable Feet..Spec-6
1.12.2 Retaining the Machine by the Anti-Topple Retainer Spec-7
1.12.3 Installing the Machine where the Long Cassette Is to Be Used Spec-7
1.12.4 Using the Supporter Spec-8
1.13 Disposal.. Spec-9
1.13.1 Disposal of IP Spec-9

Machine Description (MD)

1. **Machine Overview MD-1**
   - 1.1 Features MD-1
   - 1.2 System Configuration...MD-1
   - 1.3 Overall Machine Configuration and Component Names MD-2
     - 1.3.1 External View of Machine MD-2
     - 1.3.2 Nomenclature and Functions MD-2
     - 1.3.3 Operation Panel Display Screen Contents.. MD-3
   - 1.4 Machine Components MD-4
     - 1.4.1 Unit Locations.. MD-4
     - 1.4.2 Roller Locations and Conveyance Paths MD-4
   - 1.5 I/O Locations and Functional Descriptions...................................MD-5
     - 1.5.1 Cassette Set Unit - 1 .... MD-5
     - 1.5.2 Cassette Set Unit - 2 .... MD-6
     - 1.5.3 Cassette Set Unit - 3 .... MD-7
     - 1.5.4 Erasure Unit MD-8
     - 1.5.5 Side-Positioning Conveyor Unit - 1 .... MD-9
     - 1.5.6 Side-Positioning Conveyor Unit - 2 .... MD-10
     - 1.5.7 Subscanning Unit MD-11
     - 1.5.8 Housing MD-12
   - 1.6 Board Locations..MD-13
     - 1.6.1 Housing MD-13
     - 1.6.2 Cassette Set Unit MD-13
     - 1.6.3 Erasure Unit MD-13
     - 1.6.4 Scanning Optics Unit... MD-14
     - 1.6.5 Light-Collecting Unit MD-14
     - 1.6.6 Subscanning Unit MD-14
   - 1.7 System Block Diagram...MD-15

Troubleshooting (MT)

2. Error Code Table MT-11

Service Parts List (SP)

How to Use Service Parts List SP-1
INDEX SP-2
01A COVER 1 ....SP-3
01B COVER 2 ....SP-4
02A FRAME 1 ....SP-5
02B FRAME 2 ....SP-6
02C FRAME 3 ....SP-7
03A CASSETTE SET UNIT 1 ....SP-8
03B CASSETTE SET UNIT 2 ....SP-9
03C CASSETTE SET UNIT 3 ....SP-10
03D CASSETTE SET UNIT 4 .... SP-11
03E CASSETTE SET UNIT 5 ....SP-12
03F CASSETTE SET UNIT 6 ....SP-13
03G CASSETTE SET UNIT 7 ....SP-14
03H CASSETTE SET UNIT 8 ....SP-15
03I CASSETTE SET UNIT 9 ....SP-16
03J CASSETTE SET UNIT 10 ....SP-17
03K CASSETTE SET UNIT 11 ....SP-18
03L CASSETTE SET UNIT 12 ....SP-19
03M CASSETTE SET UNIT 13 ....SP-20
03N CASSETTE SET UNIT 14 ....SP-21
04A ERASURE UNIT 1 ....SP-22
04B ERASURE UNIT 2 ....SP-23
04C ERASURE UNIT 3 ....SP-24
05A SIDE-POSITIONING CONVEYOR 1 ....SP-25
05B SIDE-POSITIONING CONVEYOR 2 ....SP-26
05C SIDE-POSITIONING CONVEYOR 3 ....SP-27
05D SIDE-POSITIONING CONVEYOR 4 ....SP-28
05E SIDE-POSITIONING CONVEYOR 5 ....SP-29
05F SIDE-POSITIONING CONVEYOR 6 ....SP-30
05G SIDE-POSITIONING CONVEYOR 7 ....SP-31
05H SIDE-POSITIONING CONVEYOR 8 ....SP-32
06 SCANNING OPTICS UNIT SP-33
07 LIGHT-COLLECTING UNIT SP-34
08A SUB SCANNING UNIT 1 ....SP-35
08B SUB SCANNING UNIT 2 ....SP-36
08C SUB SCANNING UNIT 3 ....SP-37
08D SUB SCANNING UNIT 4 ....SP-38
08E SUB SCANNING UNIT 5 ....SP-39
08F SUB SCANNING UNIT 6 ....SP-40
08G SUB SCANNING UNIT 7 ....SP-41
09A CONTROLLER 1 ....SP-42
09B CONTROLLER 2 ....SP-43
09C CONTROLLER 3 ....SP-44
10 CABLE SP-45
11 CIRCUIT DIAGRAM SP-46
12 PARTS NOS. SEARCH TABLE SP-54
13 OPTION SP-57
14 JIG SP-58
15 List of Service Parts for Securing and Wiring SP-59

Preventive Maintenance (PM)

1. **Preventive Maintenance Program........................PM-1**
   1.1 How To Use the Preventive Maintenance Volume......................PM-1
   1.2 Notations of Intervals..PM-1
   1.3 Preventive Maintenance Program List PM-2
      1.3.1 Maintenance Programs for the First Year....................................... PM-2
      1.3.2 Maintenance Programs for the Second Year PM-3
      1.3.3 Maintenance Programs for the Third Year PM-5
      1.3.4 Maintenance Programs for the Fourth Year PM-6
      1.3.5 Maintenance Programs for the Fifth Year.. PM-8
      1.3.6 Maintenance Programs for the Sixth Year....................................... PM-9
2. **Details of Maintenance Procedures.................... PM-11**
   2.1 Backing Up the Log PM-11
   2.2 Checking the Error Log..PM-13
   2.3 Checking the Erasure Lamp Lighting Time...............................PM-14
3. **Checking the Image/Conveyance PM-15**
   3.1 Check Before Procedures PM-15
   3.2 Checking the Image/Conveyance PM-15
   3.3 Checking the Output Characters..PM-17
4. **Pulling Out the Machine PM-18**
   4.1 Unlocking the Retainers..PM-18
   4.2 Disconnecting the Cables PM-18
5. **Removing the Covers PM-20**
   5.1 Removing the Covers (1st/5th Year) PM-20
   5.2 Removing the Covers (2nd/4th/6th Year) PM-21
   5.3 Removing the Covers (3rd Year)... PM-24
6. **Turning OFF the High-Voltage Switch PM-25**
7. **Cassette Set Unit...PM-26**
   7.1 Removing the Erasure Unit.. PM-26
   7.2 Removing the Cassette Set Unit PM-27
   7.3 Preparation for Cleaning of Suction Cups PM-30
   7.4 Cleaning the Suction Cups (Left-Hand).................................. PM-33
   7.5 Cleaning the Suction Cups (Right-Hand)................................ PM-36
   7.6 Cleaning the Rubber Rollers (Small) PM-39
   7.7 Cleaning the Rubber Rollers PM-40
   7.8 Installing the Components...PM-41
   7.9 Cleaning the Antistatic Member and Shutter PM-43
   7.10 Replacing the Dumper (Opposite Reference Side)................. PM-44
   7.11 Replacing the Dumper (Reference Side)................................ PM-45
   7.12 Cleaning inside the Machine and the Antistatic Member.......... PM-49
   7.13 Reinstalling the Cassette Set Unit... PM-50
   7.14 Cleaning the Dust-Tight Cover Assembly............................... PM-53
   7.15 Replacing the IP Suction Pump... PM-56
8. **Erasure Unit PM-62**
   8.1 Removing the Filter PM-62
   8.2 Cleaning the Filter... PM-65
   8.3 Replacing the Filter... PM-65
   8.4 Reinstalling the Filter PM-66
   8.5 Cleaning/Replacing the Brush Roller...................................... PM-68
   8.6 Reinstalling the Brush Roller Assembly PM-71

8.7 Cleaning the Reflection Plate PM-72
8.8 Reinstalling the Reflection Plate PM-73
8.9 Reinstalling the Erasure Unit PM-74

9. Side-Positioning Conveyor Unit PM-76

9.1 Removing the Side-Positioning Conveyor Unit PM-76
9.2 Cleaning the Guide PM-79
9.3 Cleaning the Rubber Rollers PM-80
9.4 Cleaning the Shock-Absorbing Rollers, Antistatic Members, and Guide PM-81

10. Subscanning Unit PM-83

10.1 Removing the Post-Reading Conveyor Guide Assembly PM-83
10.2 Removing the Light-Collecting Guide PM-84
10.3 Removing the Scanning Optics Unit PM-88
10.4 Removing the Subscanning Unit PM-91
10.5 Cleaning the Guides, Center Rollers, and Rubber Rollers PM-96
10.6 Cleaning the Flywheel (Large) and Kapton® Belt PM-101
10.7 Cleaning the Flywheel (Small) and Rubber Belt PM-103
10.8 Cleaning Inside the Machine PM-105
10.9 Reinstalling the Subscanning Unit PM-106
10.10 Reinstalling the Scanning Optics Unit PM-110

11. Light-Collecting Guide PM-114

11.1 Cleaning and Reinstalling the Light-Collecting Guide PM-114
11.2 Cleaning the Post-Reading Conveyor Guide Assembly PM-118
11.3 Reinstalling the Post-Reading Conveyor Guide Assembly PM-120
11.4 Reinstalling the Side-Positioning Conveyor Unit PM-122

12. Turning ON the High-Voltage Switch PM-125

13. Cleaning/Reinstalling the Covers and Louvers PM-126

13.1 Cleaning/Reinstalling the Covers and Louvers (1st/5th Year) . PM-126
13.2 Cleaning/Reinstalling the Covers and Louvers (2nd/4th/6th Year) PM-127
13.3 Cleaning/Reinstalling the Covers and Louvers (3rd Year) PM-129

14. Cleaning/Replacing the Air Filter PM-131

15. Securing the Machine PM-132

15.1 Connecting the Cables PM-132
15.2 Securing the Machine PM-134
15.3 Checking for Improper Protective Grounding PM-135

16. Checking the Image/Conveyance PM-135

17. Confirming the S Value PM-136

18. Checking the Error Log PM-138

Installation (IN)

1. **Specifications of Machine IN-1**
   - 1.1 Dimensions and Weight IN-1
   - 1.2 Means for Moving and Fixing the Machine IN-1
   - 1.3 Servicing Space IN-2
     - 1.3.1 Retaining with the Adjustable Feet.. IN-2
     - 1.3.2 Retaining the Machine by the Anti-Topple Retainer IN-3
     - 1.3.3 Installing the Machine at a User's Site where Long Cassettes are Used . IN-3
     - 1.3.4 Using the supporter.. IN-4
2. **Installation Work Flowchart IN-5**
3. **Preparation for Installation......................................IN-6**
   - 3.1 Precautions Regarding Installation... IN-6
     - 3.1.1 Installation Site Requirements IN-6
     - 3.1.2 Precautions on Patient Environment.. IN-6
     - 3.1.3 Handling Precautions for Printed Circuit Boards and Optical Unit IN-6
     - 3.1.4 Precautions for System Connection.. IN-6
   - 3.2 Unloading IN-7
   - 3.3 Transfer.. IN-17
   - 3.4 Temporary Placement... IN-17
   - 3.5 Checking the Items Supplied IN-18
4. **Installation Procedures...IN-19**
   - 4.1 Removing the Transportation Protective Member IN-19
5. **Connecting the Cables IN-19**
   - 5.1 Connecting the Power Cable and Checking Resistance Value .. IN-19
   - 5.2 Connecting the Interface Cable.. IN-21
6. **Final Placement IN-22**
   - 6.1 Securing the Machine IN-22
   - 6.2 Securing the Cable IN-23
7. **CR Console Installation Procedures IN-23**
8. **Installing RU Software IN-24**
   - 8.1 Starting the Machine Maintenance Utility................................... IN-24
   - 8.2 Setting the RU IP Address IN-25
   - 8.3 Setting the FTP Server IP Address IN-26
   - 8.4 Checking the Connection with the CR Console IN-28
   - 8.5 Installing the RU PC-TOOL.. IN-29
   - 8.6 Installing RU Software IN-30
9. **Image/Conveyance Checks IN-35**
   - 9.1 Check Before Procedures IN-35
   - 9.2 Image/Conveyance Checks... IN-36
10. **Confirming the S Value IN-38**
11. **Powering OFF the CR Console/RU IN-40**
12. **Cleaning the CR Console/RU IN-40**
13. **Lead Precaution Label IN-41**

Appendix 1. ADDITIONAL PROTECTIVE GROUNDING ....Appx_IN-1

Appendix 2. Securing the Machine with the Anti-Topple Retainer ....Appx_IN-2

1. Components of Anti-Topple Retainer Kit .... Appx_IN-2
2. Securing the Machine with the Anti-Topple Retainer.......... Appx_IN-3

Appendix 3 Assembling and Securing the Supporter ....Appx_IN-12

1. Components of the Supporter.. Appx_IN-12
2. Assembling the Supporter .... Appx_IN-13
3. Attachment of the Options .... Appx_IN-17
    - 3.1 Mounting the Arm ....Appx_IN-17
    - 3.2 Mounting the Base ....Appx_IN-19
    - 3.3 Mounting the Cassette Rack ....Appx_IN-20
4. Securing the Machine .... Appx_IN-21
5. Securing the Supporter... Appx_IN-25
    - 5.1 Fixing the Supporter to the Floor..Appx_IN-26
    - 5.2 Fixing the Supporter to the Wall...Appx_IN-29
    - 5.3 Securing the Machine (when the Supporter has been Fixed) Appx_IN-31
6. Applying the Seal .... Appx_IN-35
7. Nothing.. Appx_IN-35

Appendix 4. Setting the Master CL ....Appx_IN-36

1. Additionally Registering the Master CL (Procedures on the CL1) .... Appx_IN-36
2. Registering the RU (Procedures on the CL2) .... Appx_IN-39
3. Registering the Machine Information (CONNECTING EQUIPMENT) .... Appx_IN-40
4. Saving Configuration and Exiting Service Utility .... Appx_IN-40
5. Verifying Switching of Master CL .... Appx_IN-41

Appendix 5.Changing the RU's IP Address ....Appx_IN-43

1. Starting the machine Maintenance Utility .... Appx_IN-43
2. Setting the RU's IP address .... Appx_IN-43
3. Setting the FTP server IP address .... Appx_IN-43

Appendix 6.Reinstalling the RU Software.......Appx_IN-44

1. Deleting an Installed RU .... Appx_IN-44
2. Reinstalling the RU Software .... Appx_IN-44

Appendix 7.Installing the RU Software ....Appx_IN-45

1. Verifying the connection to the CR Console .... Appx_IN-45
2. Installing the RU PC-TOOL... Appx_IN-45
3. Installing the RU Software .... Appx_IN-45

Appendix 8.Corrective Procedure to be Performed after Improper RU PC-TOOL Installation. ....Appx_IN-46

1. Corrective Procedure 1... Appx_IN-46
2. Corrective Procedure 2... Appx_IN-47

Performance Check (PC)

CR-IR 357 Performance Check List PC-1

Installation Information PC-1

Checklist..PC-1

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Control Sheet

Issue date	Revision number	Reason	Pages affected
08.15.2005	00	New release (FM4693)	All pages
11.10.2005	01	Corrections (FM4750)	All pages

CR-IR 357 Service Manual

Safety Precaution

1. Safety Precautions

Warnings and cautions regarding the procedures should be observed to avoid possible physical hazards and serious accidents that may occur during installation and servicing. Labels that describe relevant precautions are attached on the machine.
The instructions on such labels should also be observed during procedures.

1.1 General Precautions

■ Power Supply

Unless otherwise instructed in the Service Manual, be sure to turn OFF the power of the machine and unplug the power plug before servicing. With the power plug still plugged, you may experience electric shock, burn, or secondary damage due to short circuit even when the machine is powered OFF. It should be noted, however, that some servicing procedures, such as voltage measurement, cannot be performed under power-OFF condition. In such cases, use due care to avoid electric shock, burn, or secondary damage due to short circuit, as instructed in this manual.

■ Drive Mechanism

Be sure to turn OFF the power before servicing the gears, cams, belts, and other drive mechanism parts. Otherwise, your body or clothing may be entangled.
However, there may be cases where the procedures cannot be performed under power-OFF condition. In such cases, use due care to avoid entanglement of your hand, foot, hairs, and clothing with any rotating mechanism, as instructed in this manual.

■ Heavy Objects

Exercise due care regarding your working posture to avoid back pain during removal and installation of heavy objects.

■ Safety Devices

Safety devices (such as fuses, circuit breakers, panels, and covers) should always be enabled. Never attempt to make any alteration or modification that may impair their safety features.

■ Optical Parts

- ***When servicing the optical parts with the protective housings removed, be sure to turn OFF the power switch.***
- ***Never remove the scanning optics unit covers.***
- ***For dust removal procedures, observe the instructions described in the service manual.***
- ***Some high-voltage parts, such as the photomultiplier, may not be sufficiently discharged even after power is turned OFF. When servicing such parts, exercise due care to avoid electric shock hazards (not to touch the connector and terminal carelessly).***
- ***Before removing the protective housings, be sure to turn OFF the high-voltage switch (HV switch). If the machine is powered ON with any of the protective housings removed, the photomultiplier will be damaged.***

■ Handling Parts Containing Hazardous Substance

When handling parts containing a hazardous substance, such as the operation panel, the photomultiplier and the erasure lamp, fully exercise care in handling. The hazardous substance may leak from the inside of a broken part.

■ Other Working Precautions

- ***When performing servicing procedures with the protective housings removed under the powered condition, turn OFF the high-voltage switch (HV switch). Carefully proceed with the procedures while checking the instructions described in the service manual, and, when the procedures are completed, put the removed protective housings back exactly where they were.***
- ***Do not remove or install any part or component while the machine is powered, because of possible electric shock hazards.***
- ***When performing checks or adjustments under the powered condition, exercise due care against electric shock or other hazards.***
- ***Do not touch the parts (such as erasure lamps) that remain at high temperature because you may suffer burns.***
- ***When servicing the scanning optics unit and printed circuit boards, be sure to wear an antistatic wristband to remove static electricity built on the human body. Static electricity may cause damage to the printed circuit boards.***
- ***Secure the machine onto the floor in place by use of its adjustable feet or retainers.***
- ***Keep clean the product labels, safety standards labels, product serial number indications, and so forth attached on the machine, and do not peel them or put another label over them.***
- ***Before powering ON the machine after completion of the servicing procedures, make sure that all the parts, screws, connectors, and so forth that were removed have been reinstalled as appropriate, and that no tool is left in the machine.***

■ Grounding

Safety provided by grounding is assured by properly establishing power cable and additional protective ground wire connections and securing the parts with retaining screws. To maintain safety, ensure that the parts and retaining screws removed for servicing purposes are restored to states existing upon installation. After the parts and retaining screws are restored to the above-mentioned states, follow the procedures set forth in this service manual to verify that the retaining screws are securely tightened to properly secure the parts.

1.2 Precautions Against Laser Radiation

As indicated in the certification and indication label attached on the right-hand side cover of the machine, the machine complies with “Laser Products - Conformance with IEC 60825-1, Am. 2 and IEC 60601-2-22; Final Guidance for Industry and FDA (Laser Notice No. 50)” and “EN60825-1 (Amendment 2).” The image reader incorporates a laser with a maximum output of 50 mW (Class 3B, semiconductor laser wavelength of 660 nm, red visible light), but you will not be exposed to any hazard if you perform tasks as instructed in the service manual.

■ Precautions Against Laser Exposure

Observe the following precautions to avoid laser exposure.

● Procedures that require precautions against laser exposure

When performing the following procedures, observe the instructions exactly as described in this manual to avoid laser exposure. After the procedures are completed, put the removed protective housings and screws back exactly in their original position to prevent leakage of a laser beam out of the machine.

- Removal and reinstallation of the scanning optics unit.
- Replacement and cleaning of subscanning unit parts.

● Preventive maintenance for keeping the machine in compliance

In order to keep the machine in compliance, perform preventive maintenance programs described in "Preventive Maintenance Volume" at intervals specified.

● Things that should not be done to avoid laser exposure

Observe the following precautions to avoid laser exposure.

- Never attempt to perform procedures other than instructed in this manual because you may be exposed to laser beam radiation.
- Do not reflect a laser beam by placing a mirror or the like in the laser beam path.
- Do not alter the light path of a laser beam.
- Do not replace optical parts while the laser is energized.
- Do not attempt to make optical axis adjustment in the field. Although the semiconductor laser beam is red visible light, field adjustment of the optical axis cannot be done.

1.3 Precautions on Patient Environment

Before the machine is installed, the supervisor at the machine installation site (the hospital’s director) should check to see whether the machine is installed in the patient environment or not.

■ Additional Protective Grounding

If the CR-IR 357 is installed in the patient environment with the connected equipment in the non-medically used room, the additional protective grounding will be required.
Definitions of "patient environment", "medically-used room", and "non-medically used room" are given below.

● Patient Environment

Patient environment is the area for the patient to receive medical procedures (treatment, tests, diagnosis, monitoring). It is the space measuring 2.5 m in all four directions and 2.5 m in height from the area of the patient’s body.
It excludes the space traveled by the patient to reach the medically-used room.

● Medically-Used Room

Room equipped with protective grounding (medical use outlet or medical use grounding terminal) implemented by the medical grounding method. The protective grounding inside the medically-used room is equipotential, and the protective grounding of this medically-used room is equipotential to that in the other medicallyused room. Generally, a portion of the medically-used room is the patient environment.

● Non-Medically Used Room

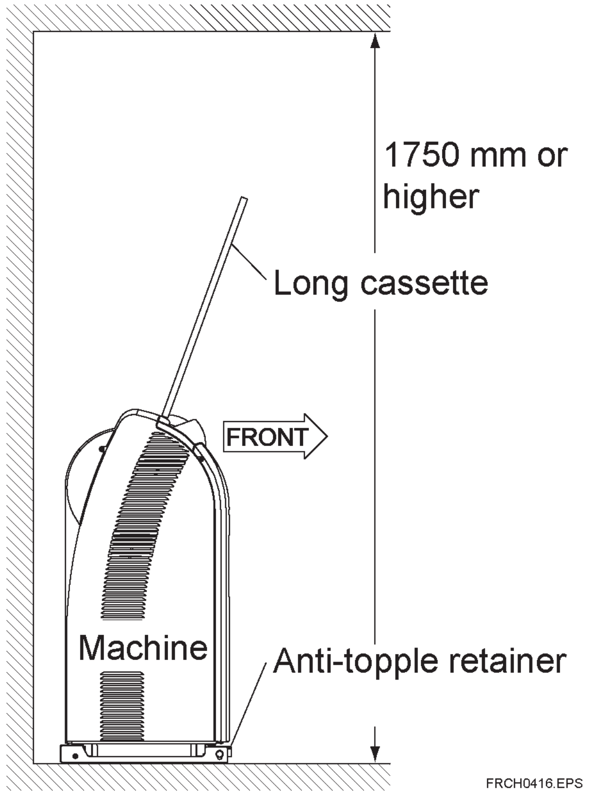
Areas outside the medically-used room are considered the non-medically used room.

1.4 Precautions in Retaining the Machine

The installation space and the method of retaining the machine are limited in a site where a long cassette is used.

WARNING

Be sure to follow the precautions below in a site where a long cassette is used.
- ***Always fix the machine by an optional anti-topple retainer.***
- ***Install the machine in a space with a height of the ceiling of 1750 mm or higher.***



1.5 Notes on Supporter Use

When performing any procedure at an institution where the supporter (optional) is used, observe the following precaution.

CAUTION

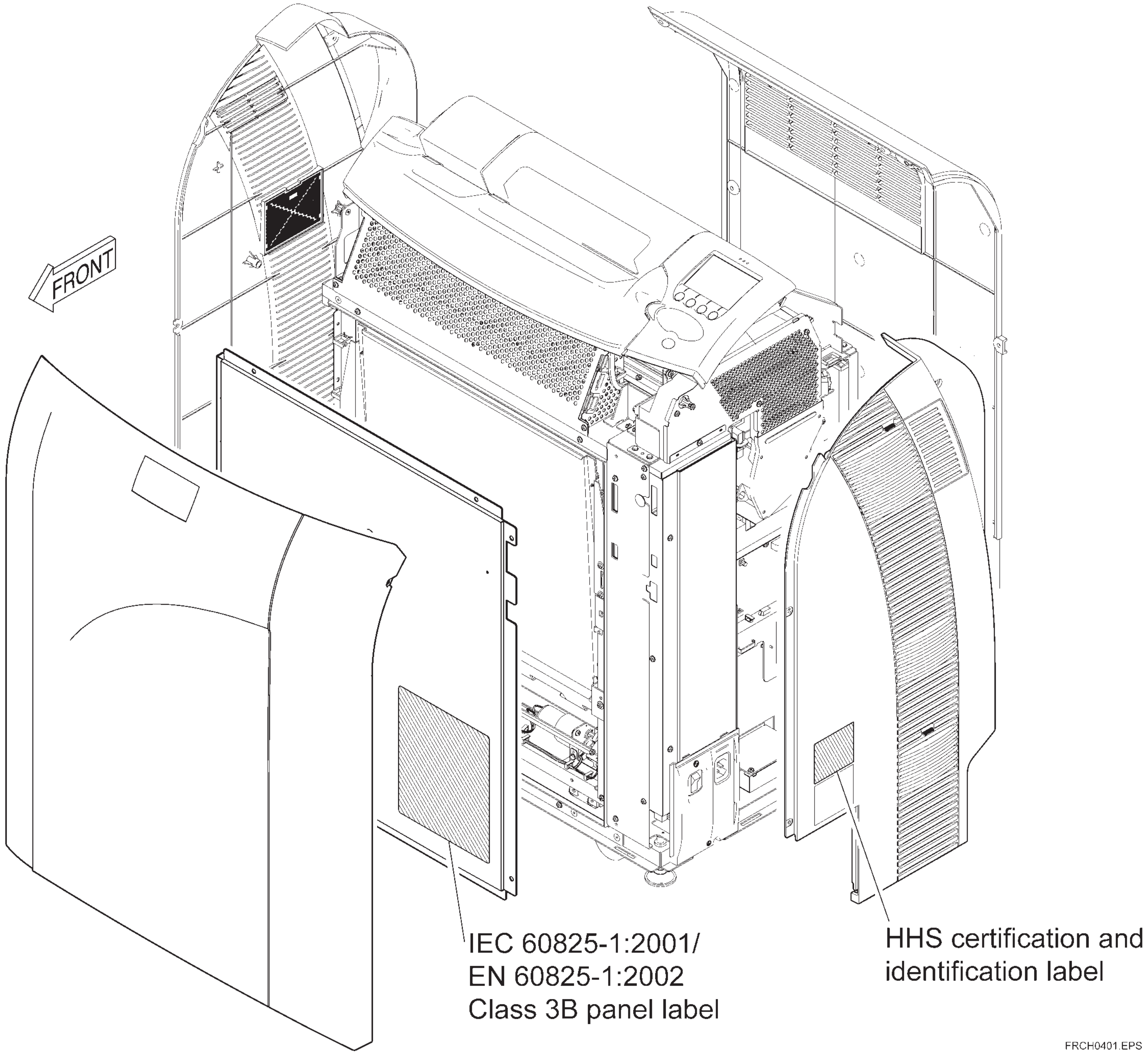
When pushing the machine into the supporter or pulling the machine out of the supporter, exercise care so that your fingers are not caught between the supporter and machine.

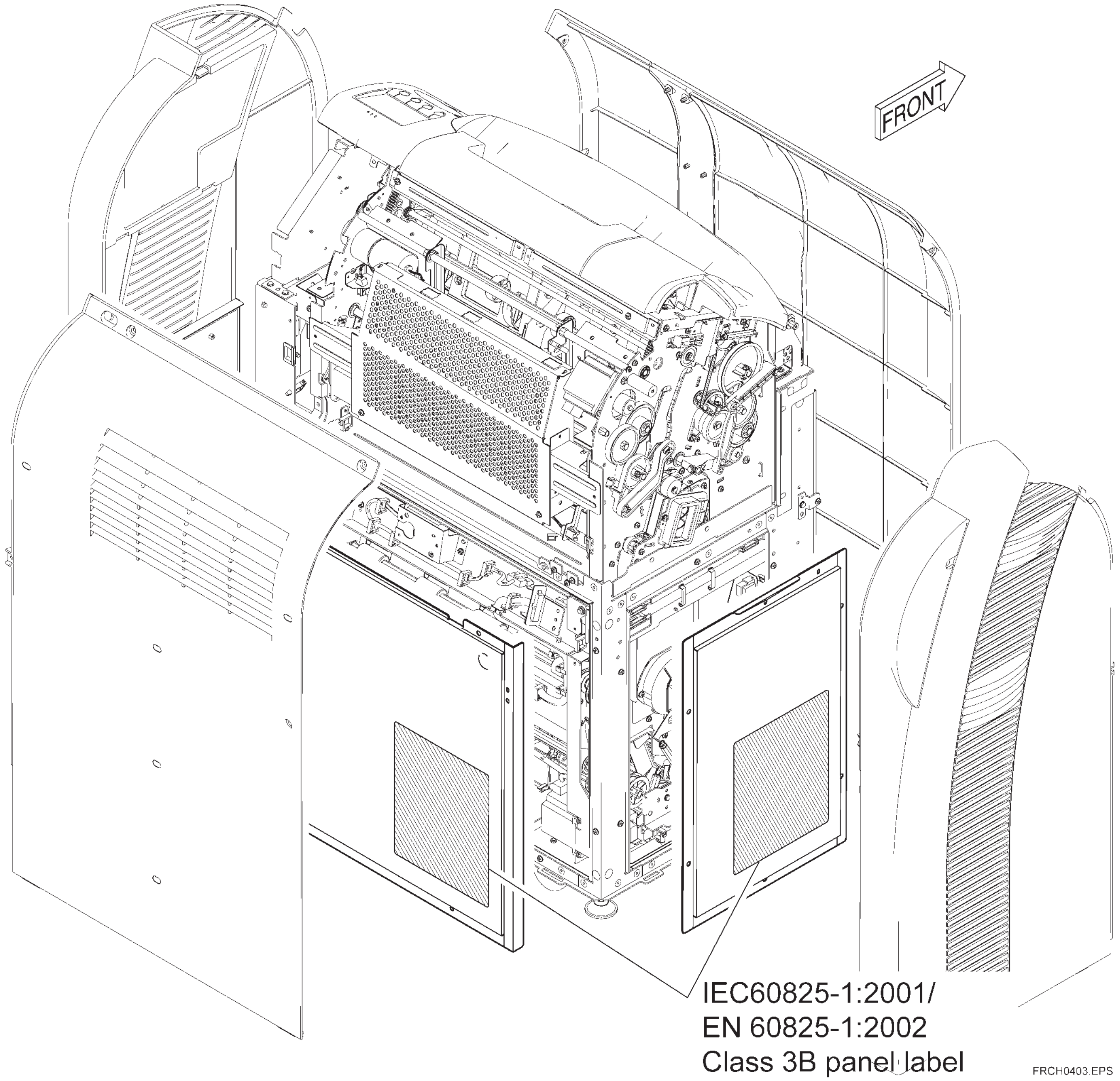
2. Labels

2.1 Laser Precaution Labels

2.1.1 Laser Precaution Label Attachment Locations

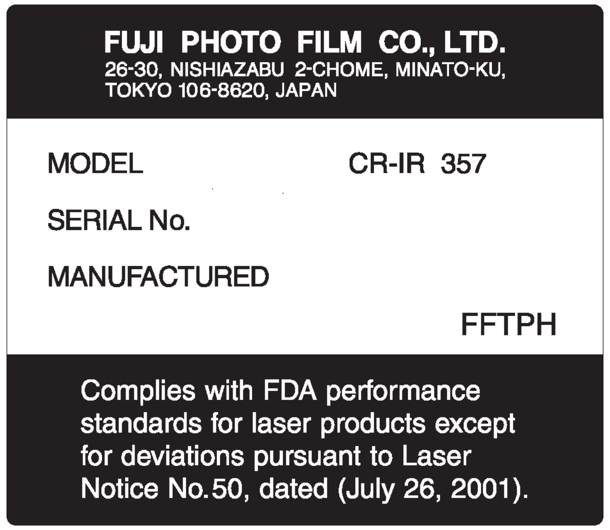
Below are illustrated the protective housings and attachment locations of laser precaution labels, as specified in "Laser Products - Conformance with IEC 60825-1, Am. 2 and IEC 60601-2-22; Final Guidance for Industry and FDA (Laser Notice No. 50)" and "EN60825-1 (Amendment 2).” issued by the FDA of the U.S.


FRONT
IEC 60825-1:2001/
EN 60825-1:2002
Class 3B panel label
HHS certification and
identification label
FRCH0401.EPS


FRONT
IEC60825-1:2001/
EN 60825-1:2002
Class 3B panel label
FRCH0403.EPS

2.1.2 List of Laser Precaution Labels

■ HHS Certification and Identification Label



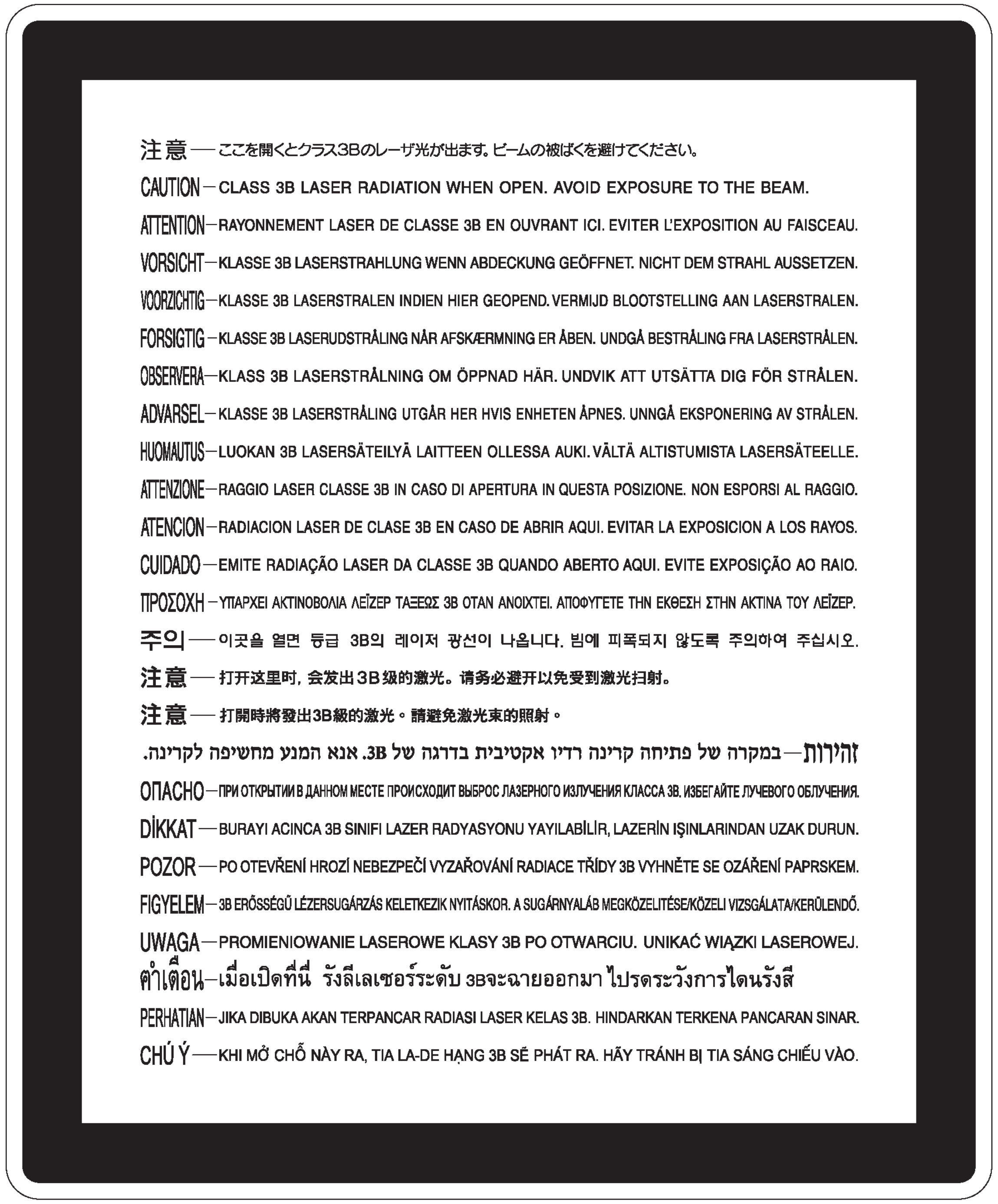
FUJI PHOTO FILM CO., LTD.
26-30, NISHIAZABU 2-CHOME, MINATO-KU,
TOKYO 106-8620, JAPAN

MODEL CR-IR 357
SERIAL No.
MANUFACTURED
FFTPH

Complies with FDA performance standards for laser products except for deviations pursuant to Laser Notice No.50, dated (July 26, 2001).

FRCH0417.EPS

■ IEC60825-1:2001/EN60825-1:2002 Class 3B Panel Label

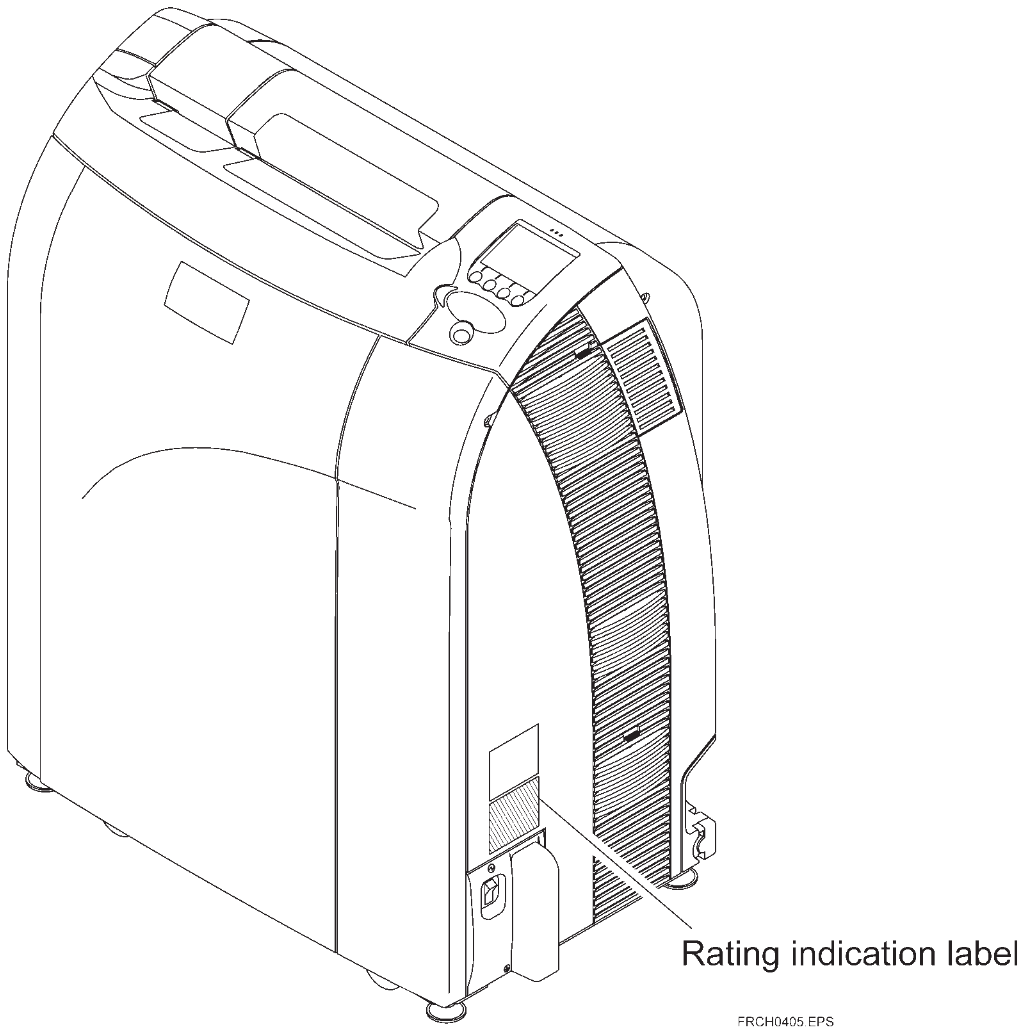


注意 ― ここを開くとクラス3Bのレーザ光が出ます。ビームの被ばくを避けてください。
CAUTION – CLASS 3B LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO THE BEAM.
ATTENTION – RAYONNEMENT LASER DE CLASSE 3B EN OUVRANT ICI. EVITER L'EXPOSITION AU FAISCEAU.
VORSICHT – KLASSE 3B LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.
VOORZICHTIG – KLASSE 3B LASERSTRALEN INDIEN HIER GEOPEND. VERMIJD BLOOTSTELLING AAN LASERSTRALEN.
FORSIGTIG – KLASSE 3B LASERUDSTRÅLING NÅR AFSKÆRMNING ER ÅBEN. UNDGÅ BESTRÅLING FRA LASERSTRÅLEN.
OBSERVERA – KLASS 3B LASERSTRÅLNING OM ÖPPNAD HÄR. UNDVIK ATT UTSÄTTA DIG FÖR STRÅLEN.
ADVARSEL – KLASSE 3B LASERSTRÅLING UTGÅR HER HVIS ENHETEN ÅPNES. UNNGÅ EKSPONERING AV STRÅLEN.
HUOMAUTUS – LUOKAN 3B LASERSÄTEILYÄ LAITTEEN OLLESSA AUKI. VÄLTÄ ALTISTUMISTA LASERSÄTEELLE.
ATTENZIONE – RAGGIO LASER CLASSE 3B IN CASO DI APERTURA IN QUESTA POSIZIONE. NON ESPORSI AL RAGGIO.
ATENCION – RADIACION LASER DE CLASE 3B EN CASO DE ABRIR AQUI. EVITAR LA EXPOSICION A LOS RAYOS.
CUIDADO – EMITE RADIAÇÃO LASER DA CLASSE 3B QUANDO ABERTO AQUI. EVITE EXPOSIÇÃO AO RAIO.
ΠΡΟΣΟΧΗ – ΥΠΑΡΧΕΙ ΑΚΤΙΝΟΒΟΛΙΑ ΛΕΪΖΕΡ ΤΑΞΕΩΣ 3B ΟΤΑΝ ΑΝΟΙΧΤΕΙ. ΑΠΟΦΥΓΕΤΕ ΤΗΝ ΕΚΘΕΣΗ ΣΤΗΝ ΑΚΤΙΝΑ ΤΟΥ ΛΕΪΖΕΡ.
주의 ― 이곳을 열면 등급 3B의 레이저 광선이 나옵니다. 빔에 피폭되지 않도록 주의하여 주십시오.
注意 ― 打开这里时，会发出3B级的激光。请务必避开以免受到激光扫射。
注意 ― 打開時將發出3B級的激光。請避免激光束的照射。
זהירות—במקרה של פתיחה קרינה רדיו אקטיבית בדרגה של 3B. אנא המנע מחשיפה לקרינה.
ОПАСНО – ПРИ ОТКРЫТИИ В ДАННОМ МЕСТЕ ПРОИСХОДИТ ВЫБРОС ЛАЗЕРНОГО ИЗЛУЧЕНИЯ КЛАССА 3В. ИЗБЕГАЙТЕ ЛУЧЕВОГО ОБЛУЧЕНИЯ.
DİKKAT ― BURAYI ACINCA 3B SINIFI LAZER RADYASYONU YAYILABİLİR, LAZERİN IŞINLARINDAN UZAK DURUN.
POZOR ― PO OTEVŘENÍ HROZÍ NEBEZPEČÍ VYZAŘOVÁNÍ RADIACE TŘÍDY 3B VYHNĚTE SE OZÁŘENÍ PAPRSKEM.
FIGYELEM – 3B ERŐSSÉGŰ LÉZERSUGÁRZÁS KELETKEZIK NYITÁSKOR. A SUGÁRNYALÁB MEGKÖZELITÉSE/KÖZELI VIZSGÁLATA/KERÜLENDŐ.
UWAGA – PROMIENIOWANIE LASEROWE KLASY 3B PO OTWARCIU. UNIKAĆ WIĄZKI LASEROWEJ.
คำเตือน – เมื่อเปิดที่นี่ รังสีเลเซอร์ระดับ 3Bจะฉายออกมา ไปรดระวังการไดนรังสี
PERHATIAN – JIKA DIBUKA AKAN TERPANCAR RADIASI LASER KELAS 3B. HINDARKAN TERKENA PANCARAN SINAR.
CHÚ Ý ― KHI MỞ CHỖ NÀY RA, TIA LA-DE HẠNG 3B SẼ PHÁT RA. HÃY TRÁNH BỊ TIA SÁNG CHIẾU VÀO.

FRCH0415.EPS

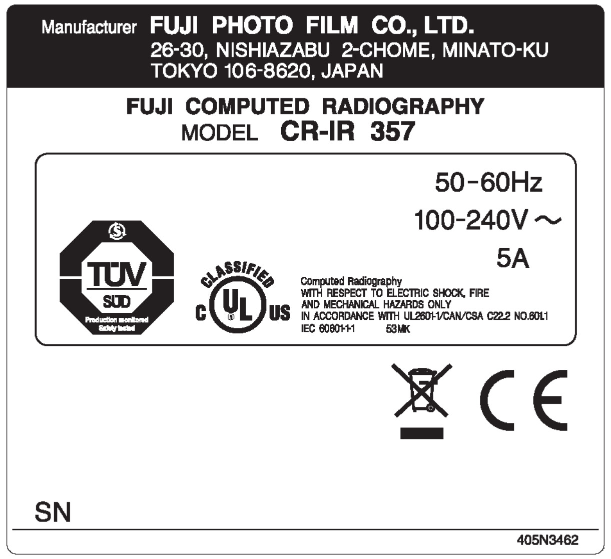
2.2 Ratings Indication Labels

Attachment Position


Rating indication label

FRCH0405.EPS

Ratings Indication Labels



Manufacturer **FUJI PHOTO FILM CO., LTD.**
26-30, NISHIAZABU 2-CHOME, MINATO-KU
TOKYO 106-8620, JAPAN

FUJI COMPUTED RADIOGRAPHY
MODEL **CR-IR 357**

50-60Hz
100-240V ~
5A

Computed Radiography
WITH RESPECT TO ELECTRIC SHOCK, FIRE
AND MECHANICAL HAZARDS ONLY
IN ACCORDANCE WITH UL2601-1/CAN/CSA C22.2 NO.601.1
IEC 60601-1-1 53MK

SN

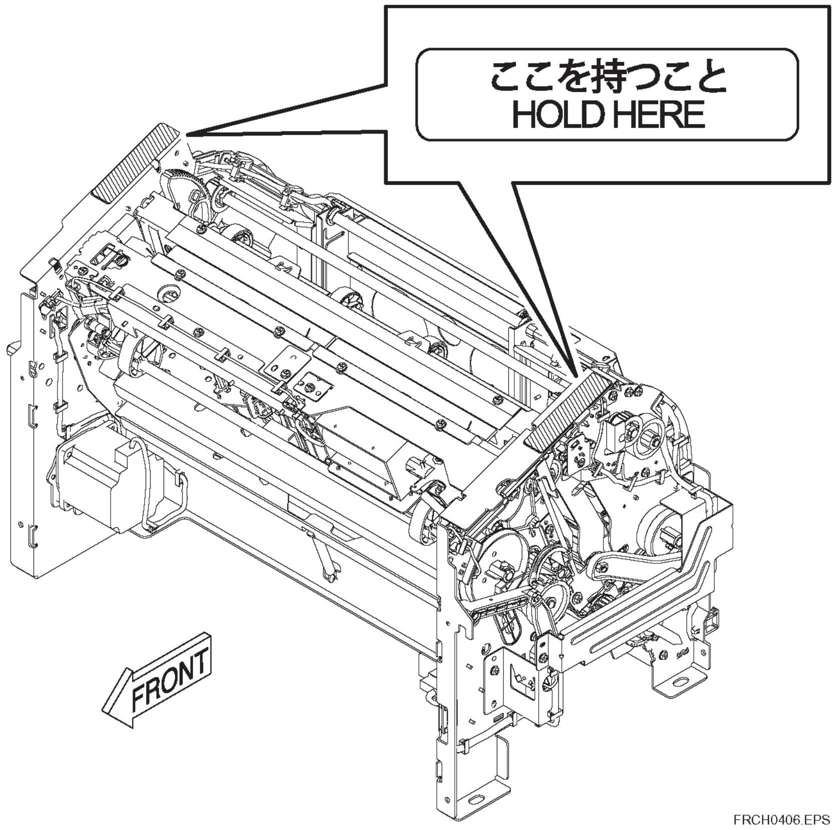
405N3462

TÜV SÜD
Production monitored
Safety tested
CLASSIFIED
C UL US
CE

FRCH0429.EPS

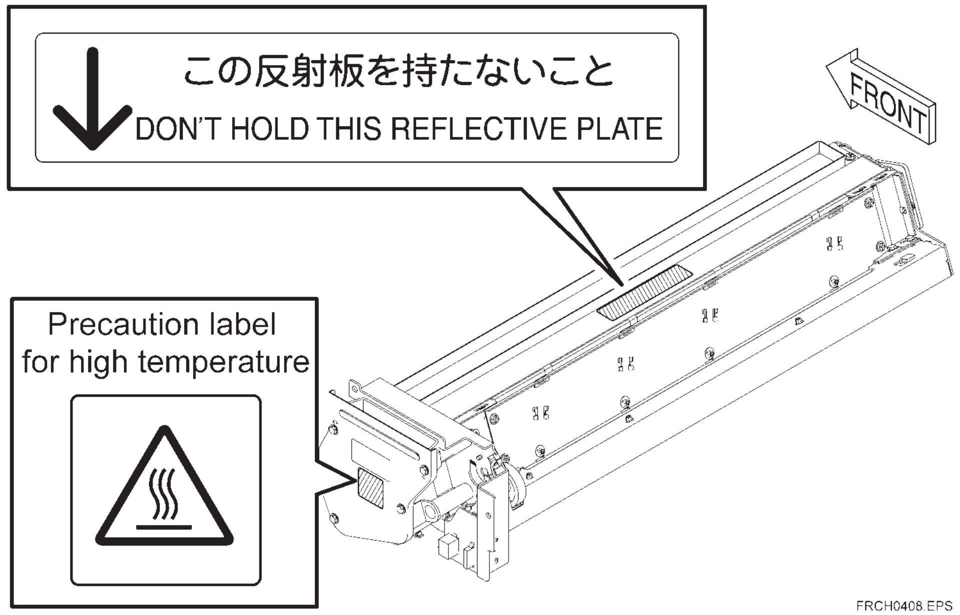
2.3 Handling Instruction Labels and Attachment Locations

2.3.1 Cassette Set Unit


ここを持つこと
HOLD HERE
FRONT

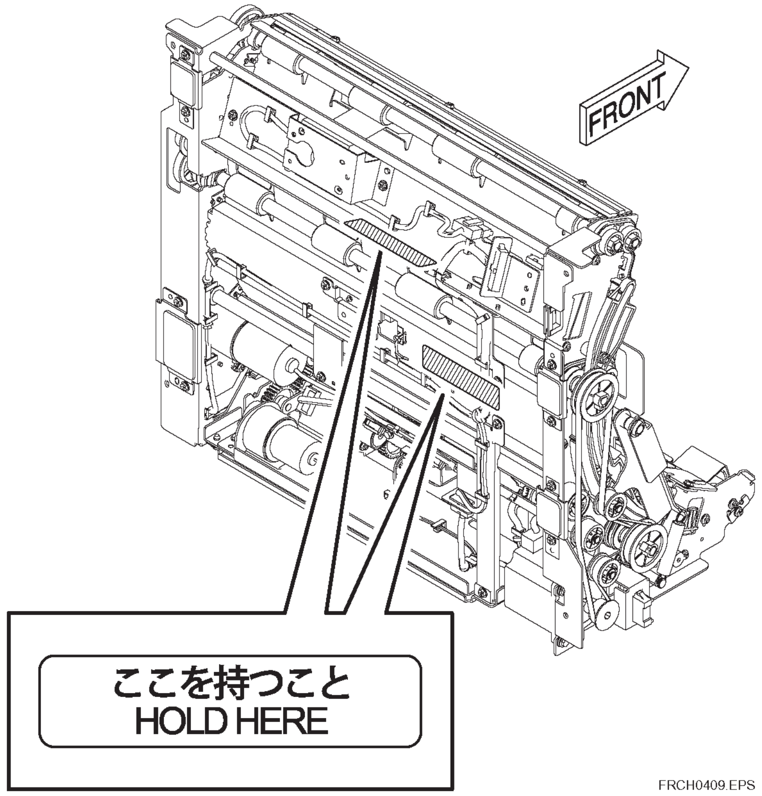
FRCH0406.EPS

2.3.2 Erasure Unit


この反射板を持たないこと
DON'T HOLD THIS REFLECTIVE PLATE
FRONT
Precaution label
for high temperature

FRCH0408.EPS

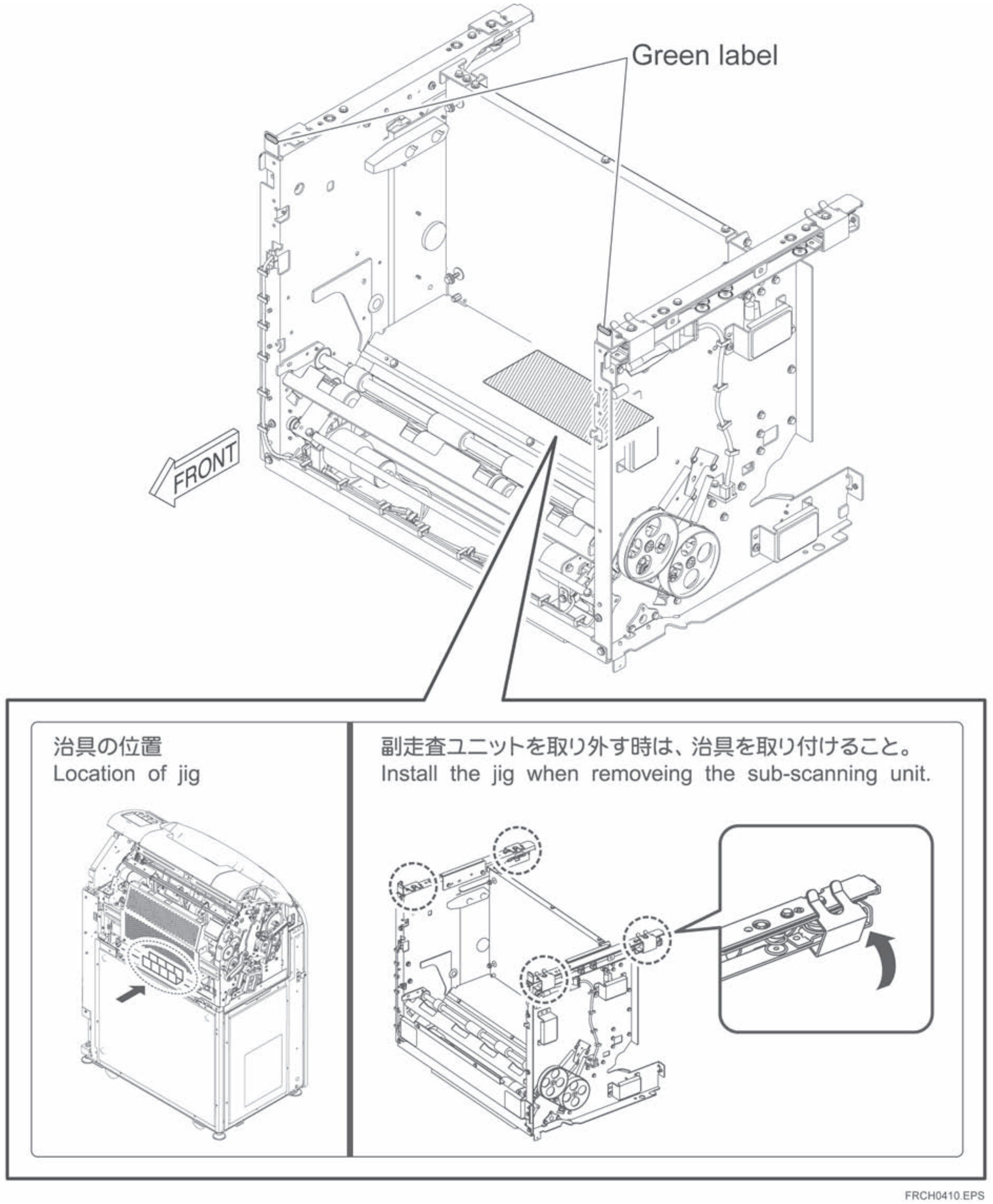
2.3.3 Side-Positioning Conveyor Unit


FRONT
ここを持つこと
HOLD HERE

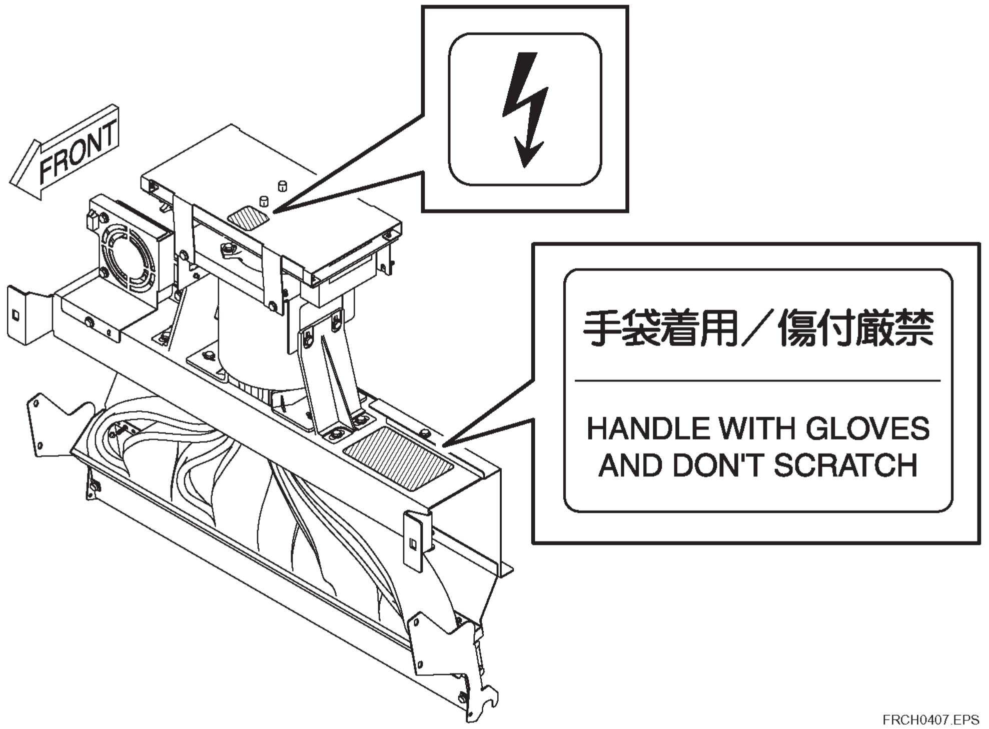
FRCH0409.EPS

2.3.4 Subscanning Unit

Hold the portions of the green labels to dismount/mount the subscanning unit from/on the housing.

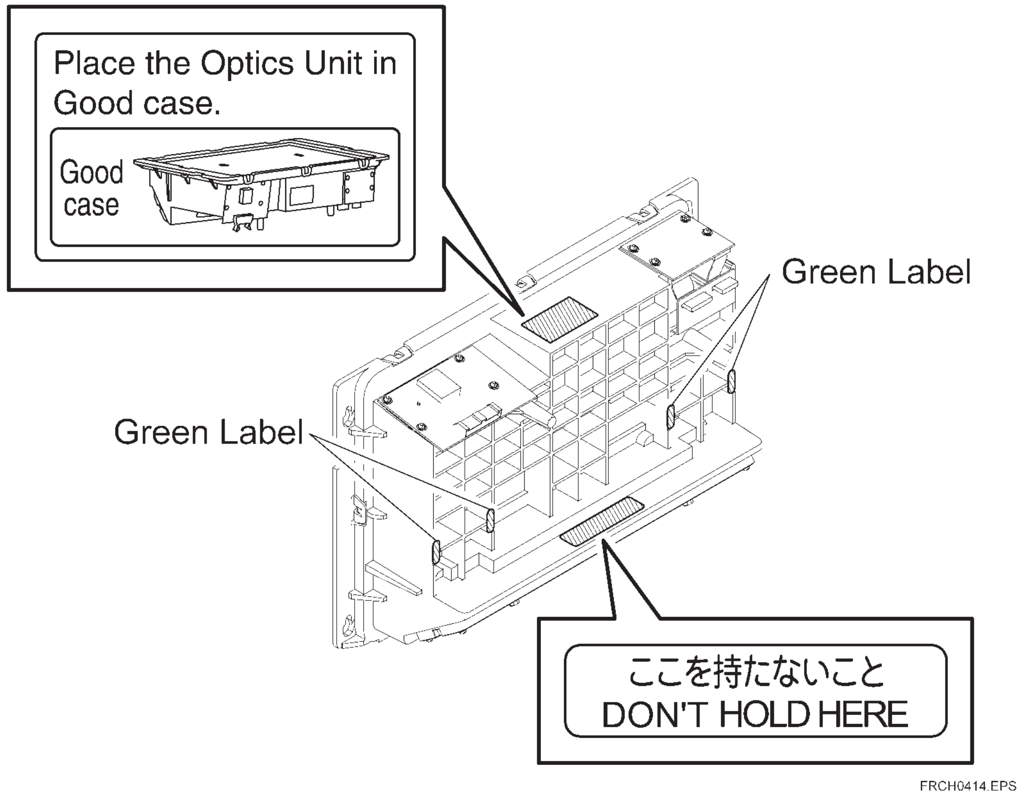

Green label
FRONT
治具の位置
Location of jig
副走査ユニットを取り外す時は、治具を取り付けること。
Install the jig when removeing the sub-scanning unit.
FRCH0410.EPS

2.3.5 Light-Collecting Guide

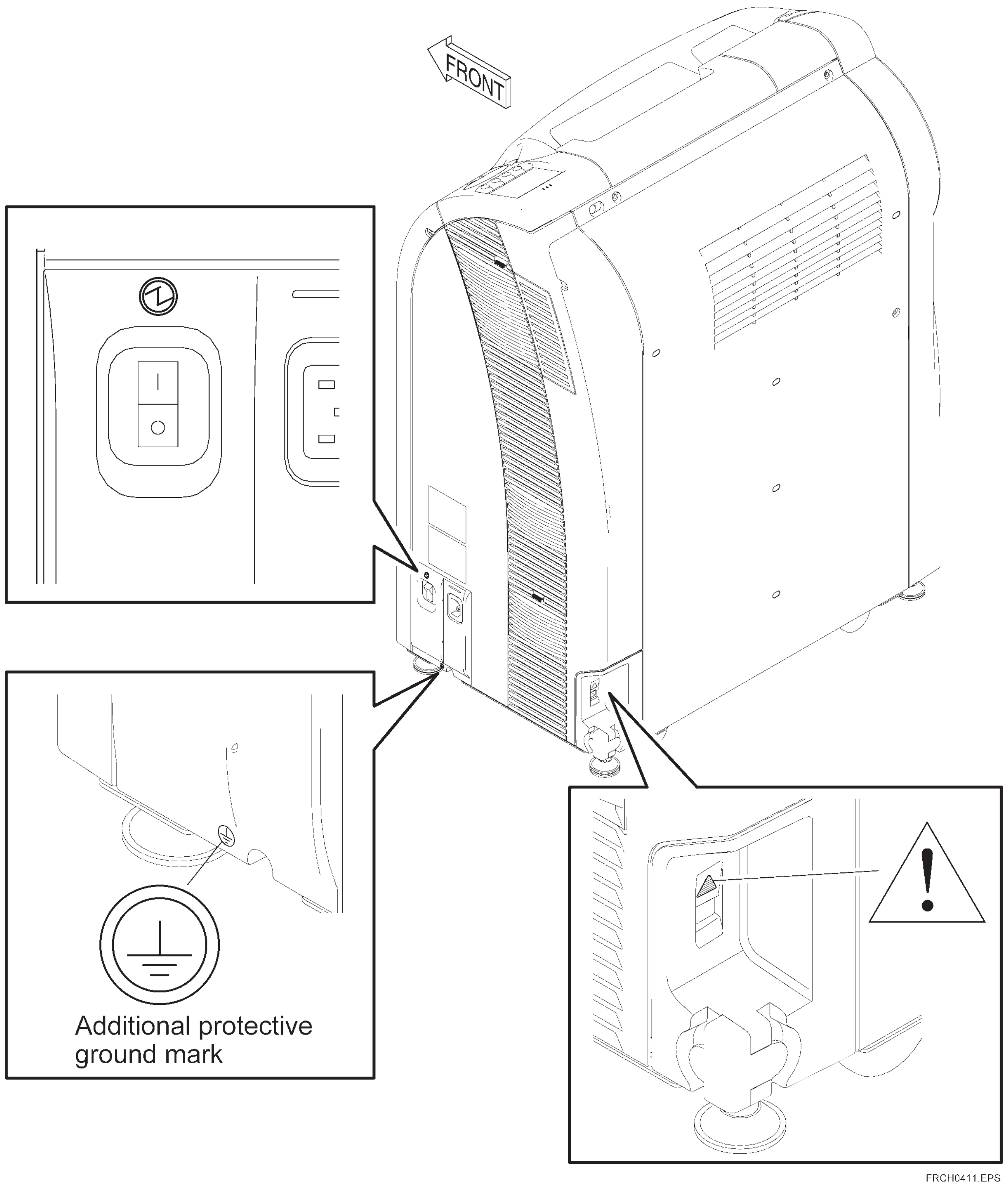

FRONT
手袋着用／傷付厳禁
HANDLE WITH GLOVES AND DON'T SCRATCH
FRCH0407.EPS

2.3.6 Scanning Optics Unit

Hold the portions of the green labels to dismount/mount the scanning optics unit.

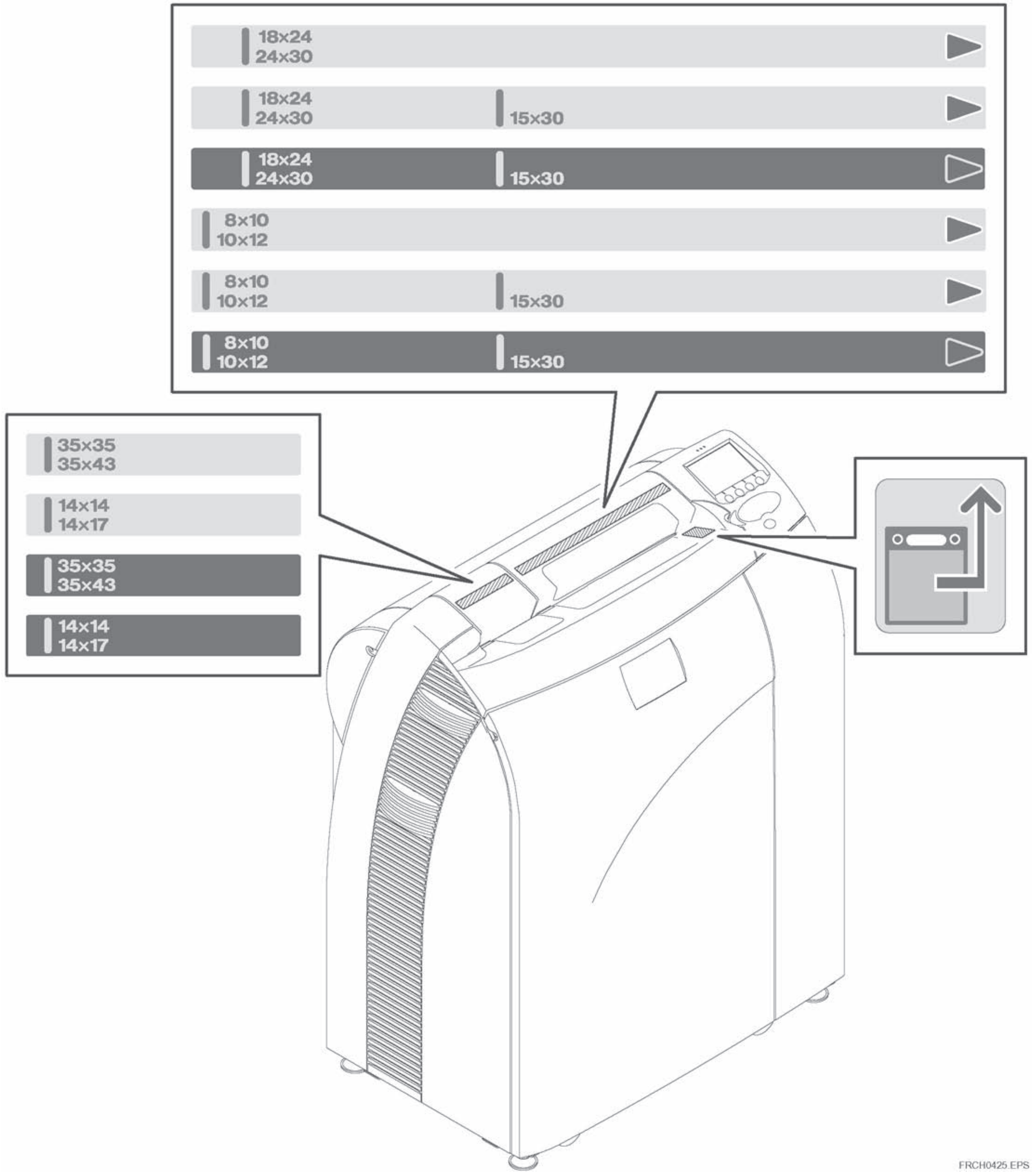

Place the Optics Unit in Good case.
Good case
Green Label
Green Label
ここを持たないこと
DON'T HOLD HERE
FRCH0414.EPS

2.3.7 Covers


FRONT
Additional protective ground mark
FRCH0411.EPS

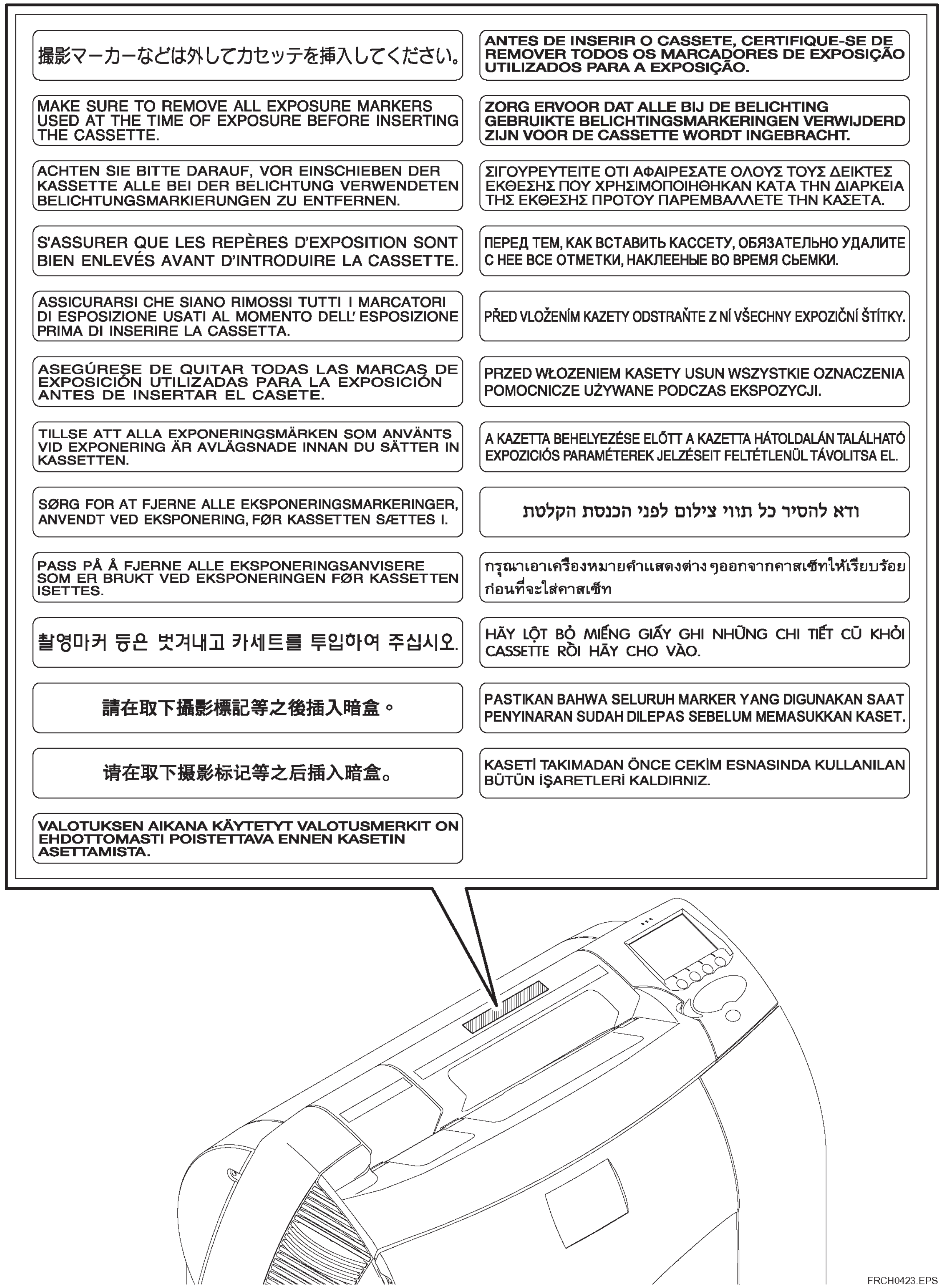
2.3.8 Cassette Insertion Operation Label, Cassette Right-Justifying Label

The cassette insertion operation label differs depending on the type of the cassette used in the user's site.


18x24
24x30
18x24
24x30
15x30
18x24
24x30
15x30
8x10
10x12
8x10
10x12
15x30
8x10
10x12
15x30
35x35
35x43
14x14
14x17
35x35
35x43
14x14
14x17
FRCH0425.EPS

2.3.9 Lead Precaution Label

Apply the lead precaution label suitable for the local language.



撮影マーカーなどは外してカセッテを挿入してください。

MAKE SURE TO REMOVE ALL EXPOSURE MARKERS USED AT THE TIME OF EXPOSURE BEFORE INSERTING THE CASSETTE.

ACHTEN SIE BITTE DARAUF, VOR EINSCHIEBEN DER KASSETTE ALLE BEI DER BELICHTUNG VERWENDETEN BELICHTUNGSMARKIERUNGEN ZU ENTFERNEN.

S'ASSURER QUE LES REPÈRES D'EXPOSITION SONT BIEN ENLEVÉS AVANT D'INTRODUIRE LA CASSETTE.

ASSICURARSI CHE SIANO RIMOSSI TUTTI I MARCATORI DI ESPOSIZIONE USATI AL MOMENTO DELL' ESPOSIZIONE PRIMA DI INSERIRE LA CASSETTA.

ASEGÚRESE DE QUITAR TODAS LAS MARCAS DE EXPOSICIÓN UTILIZADAS PARA LA EXPOSICIÓN ANTES DE INSERTAR EL CASETE.

TILLSE ATT ALLA EXPONERINGSMÄRKEN SOM ANVÄNTS VID EXPONERING ÄR AVLÄGSNADE INNAN DU SÄTTER IN KASSETTEN.

SØRG FOR AT FJERNE ALLE EKSPONERINGSMARKERINGER, ANVENDT VED EKSPONERING, FØR KASSETTEN SÆTTES I.

PASS PÅ Å FJERNE ALLE EKSPONERINGSANVISERE SOM ER BRUKT VED EKSPONERINGEN FØR KASSETTEN ISETTES.

촬영마커 등은 벗겨내고 카세트를 투입하여 주십시오.

請在取下攝影標記等之後插入暗盒。

请在取下摄影标记等之后插入暗盒。

VALOTUKSEN AIKANA KÄYTETYT VALOTUSMERKIT ON EHDOTTOMASTI POISTETTAVA ENNEN KASETIN ASETTAMISTA.

ANTES DE INSERIR O CASSETE, CERTIFIQUE-SE DE REMOVER TODOS OS MARCADORES DE EXPOSIÇÃO UTILIZADOS PARA A EXPOSIÇÃO.

ZORG ERVOOR DAT ALLE BIJ DE BELICHTING GEBRUIKTE BELICHTINGSMARKERINGEN VERWIJDERD ZIJN VOOR DE CASSETTE WORDT INGEBRACHT.

ΣΙΓΟΥΡΕΥΤΕΙΤΕ ΟΤΙ ΑΦΑΙΡΕΣΑΤΕ ΟΛΟΥΣ ΤΟΥΣ ΔΕΙΚΤΕΣ ΕΚΘΕΣΗΣ ΠΟΥ ΧΡΗΣΙΜΟΠΟΙΗΘΗΚΑΝ ΚΑΤΑ ΤΗΝ ΔΙΑΡΚΕΙΑ ΤΗΣ ΕΚΘΕΣΗΣ ΠΡΟΤΟΥ ΠΑΡΕΜΒΑΛΛΕΤΕ ΤΗΝ ΚΑΣΕΤΑ.

ПЕРЕД ТЕМ, КАК ВСТАВИТЬ КАССЕТУ, ОБЯЗАТЕЛЬНО УДАЛИТЕ С НЕЕ ВСЕ ОТМЕТКИ, НАКЛЕЕНЫЕ ВО ВРЕМЯ СЬЕМКИ.

PŘED VLOŽENÍM KAZETY ODSTRAŇTE Z NÍ VŠECHNY EXPOZIČNÍ ŠTÍTKY.

PRZED WŁOZENIEM KASETY USUN WSZYSTKIE OZNACZENIA POMOCNICZE UŻYWANE PODCZAS EKSPOZYCJI.

A KAZETTA BEHELYEZÉSE ELŐTT A KAZETTA HÁTOLDALÁN TALÁLHATÓ EXPOZICIÓS PARAMÉTEREK JELZÉSEIT FELTÉTLENÜL TÁVOLITSA EL.

ודא להסיר כל תווי צילום לפני הכנסת הקלטת

กรุณาเอาเครื่องหมายคำแสดงต่าง ๆออกจากคาสเซ็ทให้เรียบร้อย ก่อนที่จะใส่คาสเซ็ท

HÃY LỘT BỎ MIẾNG GIẤY GHI NHỮNG CHI TIẾT CŨ KHỎI CASSETTE RỒI HÃY CHO VÀO.

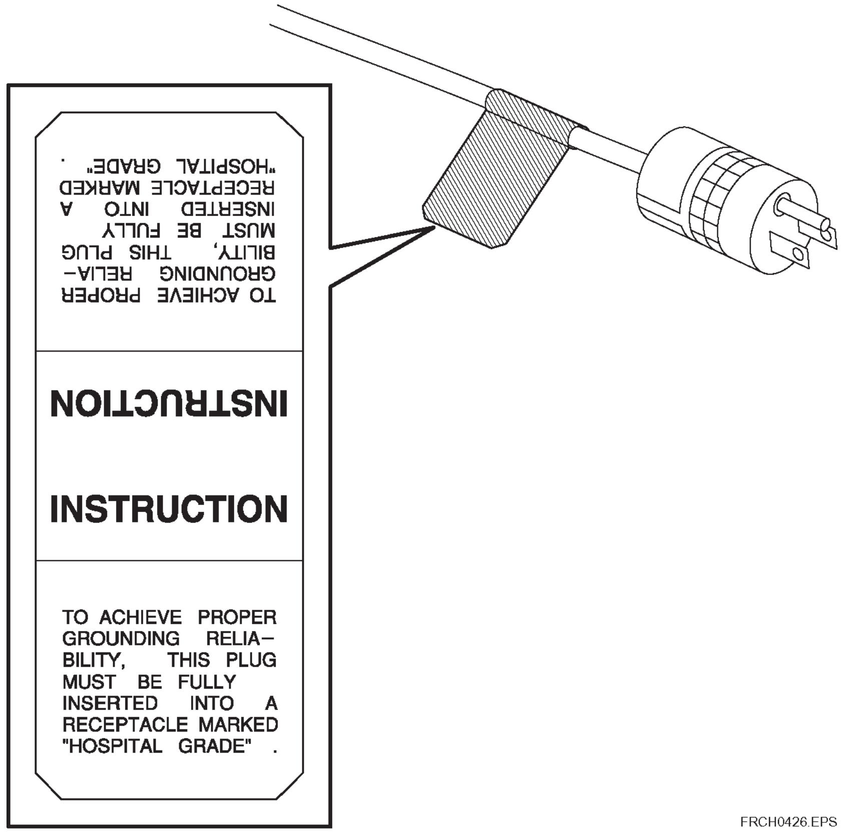
PASTIKAN BAHWA SELURUH MARKER YANG DIGUNAKAN SAAT PENYINARAN SUDAH DILEPAS SEBELUM MEMASUKKAN KASET.

KASETİ TAKIMADAN ÖNCE CEKİM ESNASINDA KULLANILAN BÜTÜN İŞARETLERİ KALDIRNIZ.

FRCH0423.EPS

2.3.10 Power Cable Caution Label

Power Cable Caution Label (Only Hospital Grade Power Cable for U.S.A.)



TO ACHIEVE PROPER GROUNDING RELIA– BILITY, THIS PLUG MUST BE FULLY INSERTED INTO A RECEPTACLE MARKED "HOSPITAL GRADE" .

INSTRUCTION

INSTRUCTION

TO ACHIEVE PROPER GROUNDING RELIA– BILITY, THIS PLUG MUST BE FULLY INSERTED INTO A RECEPTACLE MARKED "HOSPITAL GRADE" .

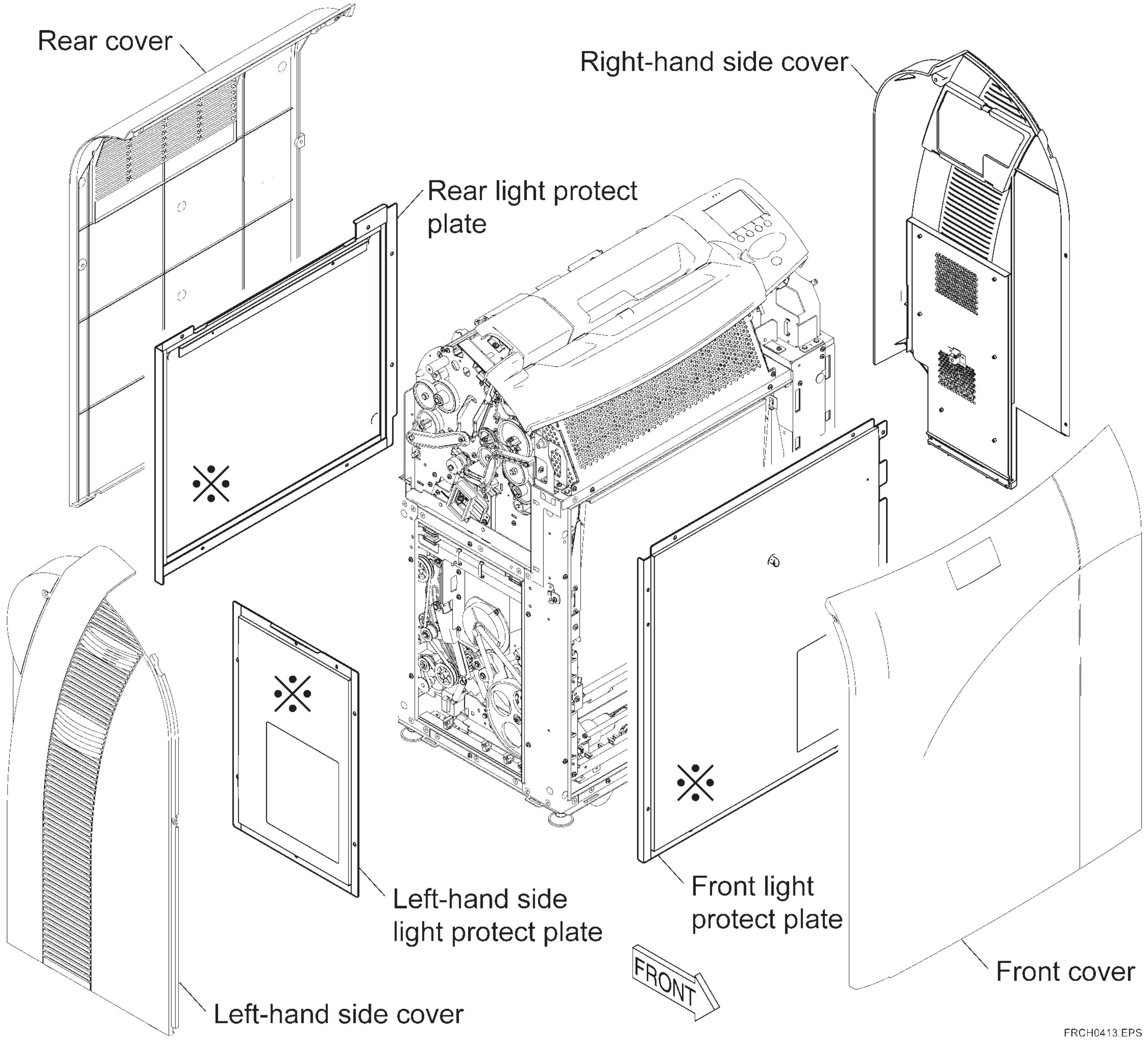
FRCH0426.EPS

3. Protective Housings Against Laser Exposure

Even when the protective housings are removed for servicing, a laser beam will never leak out from the machine unless the optical path is intentionally changed. However, if the optical path is changed inadvertently during optics-related procedures, the service engineer or other people around the machine may be possibly exposed to laser radiation.
During optics-related procedures, carefully perform the procedures while checking the instructions described in this manual, and after the procedures are completed, restore the protective housings removed back exactly where they were.

■ Protective Housing of the Machine

The removable protective housings of the machine are illustrated below. The three covers marked by ∗ in the illustration below are protective housings against laser exposure.


Rear cover
Right-hand side cover
Rear light protect plate
※
※
※
Left-hand side light protect plate
Front light protect plate
FRONT
Front cover
Left-hand side cover
FRCH0413.EPS

4. CLASSIFICATION

1. **According to the type of protection against electrical shock**
   CLASS 1 EQUIPMENT

2. **According to the degree of protection against electrical shock**
   NO APPLIED PART

3. **Protection against harmful ingress of water**
   IPXO

4. **According to the degree of safety of application in the presence of a flammable anesthetics mixture with air or with oxygen or nitrous oxide.**
   Equipment not suitable for use in the presence of a flammable anesthetics mixture with air or with oxygen or nitrous oxide.

5. **According to the mode of operation**
   CONTINUOUS OPERATION

5. Cautions on Electromagnetic Waves

5.1 Electromagnetic Compatibility (EMC)

This equipment has been tested and found to comply with the limits for medical devices to the IEC60601-1-2 : 1993 (up to 24999), IEC60601-1-2 : 2001 (after 25001), Medical Device Directive 93/42/EEC.

These limits are designed to provide reasonable protection against harmful interference in a typical medical installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to other devices in the vicinity.

However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to other devices, which can be determined by tuning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures;

- Reorient or relocate the receiving device.
- Increase the separation between the equipment.
- Connect the equipment into an outlet on a circuit different from that to which the other device(s) are connected.

Consult the manufacturer or field service technician for help.

5.2 Further information for IEC60601-1-2:2001

Model name CAPSULA X/CARBON X is referred to as CR-IR 357 in this section.

- Medical electrical equipment needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information described as follows.
- Portable and mobile RF communications equipment can affect medical electrical equipment.
- The use of accessories, transducers and cables other than those specified, with the exception of transducers and cables sold by FUJI PHOTO FILM CO., LTD as replacement parts for internal components, may result in increased emissions or decreased immunity of the CR-IR 357.

  List of Cables

Name	Fuji Photo Film Parts code	General Specification
Power Cable	136N0377 (Europe) 136N0376 (UK)	-
I/F Cable	-	TIA/EIA-568 Cat5 or more. Straight cable of UTP type.

- The CR-IR 363 should not be used adjacent to or stacked with other equipment. If adjacent or stacked use is necessary, the CR-IR 357 should be observed to verify normal operation in the configuration in which it will be used.

Guidance and manufacturer’s declaration - electromagnetic emissions

The CR-IR 357 is intended for use in the electromagnetic environment specified below. The customer or the user of the CR-IR 357 should assure that it is used in such an environment.

Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	The CR-IR 357 uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class A	The CR-IR 357 is suitable for use in all establishments other than domestic and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Complies	

Guidance and manufacturer’s declaration - electromagnetic immunity

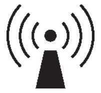
The CR-IR 357 is intended for use in the electromagnetic environment specified below. The customer or the user of the CR-IR 357 should assure that it is used in such an environment.

Immunity test	IEC 60601test level	Compliance level	Electromagnetic environment - guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±6kV contact ±8kV air	±2kV contact ±4kV contact ±6kV contact ±2kV air ±4kV air ±8kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	±2kV for power supply lines ±1kV for input/output lines	±2kV for power supply lines ±1kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1kV differential mode ±2kV common mode	±1kV differential mode ±2kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	< 5 % U_T (>95% dip in U_T) for 0.5 cycle 40 % U_T (60% dip in U_T) for 5 cycles 70 % U_T (30% dip in U_T) for 25 cycles < 5 % U_T (>95% dip in U_T) for 5 s	< 5 % U_T (>95% dip in U_T) for 0.5 cycle 40 % U_T (60% dip in U_T) for 5 cycles 70 % U_T (30% dip in U_T) for 25 cycles < 5 % U_T (>95% dip in U_T) for 5 s	Mains power quality should be that of a typical commercial or hospital environment. If the user of the CR-IR 357 requires continued operation during power mains interruptions, it is recommended that the CR-IR 357 be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

NOTE: U_T is the a.c. mains voltage prior to application of the test level.

Guidance and manufacturer’s declaration - electromagnetic immunity

The CR-IR 357 is intended for use in the electromagnetic environment specified below. The customer or the user of the CR-IR 357 should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Conducted RF IEC 61000-4-6	3 Vrms 150kHz - 80MHz	3 Vrms	Portable and mobile RF communications equipment should be used no closer to any part of the CR-IR 357, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended separation distance**
Radiated RF IEC 61000-4-3	3 V/m 80MHz - 2.5GHz	3 V/m	$d = 1.2\sqrt{P}$ $d = 1.2\sqrt{P}$ 80 MHz - 800 MHz $d = 2.3\sqrt{P}$ 800 MHz - 2.5 GHz where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,[a] should be less than the compliance level in each frequency range.[b] Interference may occur in the vicinity of equipment marked with the following symbol: 

NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies.
NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

[a] Field strength from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the CR-IR 357 is used exceeds the applicable RF compliance, the CR-IR 357 should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the CR-IR 357.

[b] Over the frequency range 150 kHz to 80 MHz, field strength should be less than 3 V/m.

Recommended separation distances between Portable and mobile RF communications equipment and the CR-IR 357			
The CR-IR 357 is intended for use in the electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the CR-IR 357 can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the CR-IR 357 as recommended below, according to the maximum output power of the communications equipment.			
Rated maximum output power of transmitter W	**Separation distance according to frequency of transmitter** m		
	150 kHz - 80 MHz $d = 1.2\sqrt{P}$	**80 MHz - 800 MHz** $d = 1.2\sqrt{P}$	**800 MH - 2.5 GHz** $d = 2.3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23
For transmitters rated at a maximum output power not listed above, the recommended separation distance d in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer. NOTE 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies. NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			

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Control Sheet

Issue date	Revision number	Reason	Pages affected
08.15.2005	00	New release (FM4693)	All pages
11.10.2005	01	Corrections (FM4750)	All pages

CR-IR 357 Service Manual

Product Specifications

1. Specifications of Machine

1.1 Product Code

Abbreviated product name	Description	Qty.	Operation panel screen contents	Remarks
CR IR 357 RU USA 1 E	Image reader main body CR-IR 357 (For the U.S.)	1	- For use at hospitals - English indications	- Inch-type specification - For FMSU direct selling
CR IR 357 RU E	Image reader main body CR-IR 357 (For European and other foreign countries)	1	- For use at hospitals - English indications	- Metric-type specification - For use at hospitals

1.2 Available IP Sizes and Types

■ Available IP types

- ST-VI type
- ST-VN type

■ Available IP sizes

- Inch (inch): 14 x 17, 14 x 14, 10 x 12, 8 x 10
- Metric (cm): 35 x 43, 35 x 35, 24 x 30, 18 x 24, 15 x 30

* The 15 x 30 cm IPs can also be read by a machine that is set for the inch-type.

Note that both inch- and metric-sized IPs cannot be used concurrently in this machine. The change in machine setup is necessary to change the IP size to be used. Refer to the Checks, Replacement and Adjustment of Parts “20. Changing the Machine Setup in Accordance with the IP Type (Inch/Metric Changeover)” for the detailed procedures of changing the machine setup.

☞ **{MC:20._Changing the Machine Setup in Accordance with the IP Type (Inch/Metric Changeover)}**

1.3 Available Cassette Types and Sizes

■ Cassette CC (ST Cassette)

- Inch (inch): 14 x 17, 14 x 14, 10 x 12, 8 x 10
- Metric (cm): 35 x 43, 35 x 35, 24 x 30, 18 x 24, 15 x 30

* The 15 x 30 cm cassettes can also be used in a machine that is set for the inch-type.

■ Cassette LC (Long Cassette)

● Twin cassette

- Inch (inch): 14x17-twin, 10x12-twin
- Metric (cm): 24x30-twin

● Triple cassette

- Inch (inch): 14x17-triple, 14x14-triple

1.4 List of Optional Items

Abbreviated product name	Item	Qty	Remarks
IR 355 FLOOR FIX KIT #(E)	Anti-topple retainer kit	1	For retaining the machine
IR 355 STAND #(E)	Supporter	1	
IR 355 CASSETTE RACK #(E)	Cassette rack	1	
-	Supporter cassette rack	1	
-	Supporter cassette rack (for long cassette)	1	

1.5 Product Specifications

■ Maximum Heat Generation

Standby:	0.36 MJ/h or less
Operating:	0.73 MJ/h or less
Hibernation:	0.07 MJ/h or less

■ Noise

Standby:	40 dB or less
Operating:	55 dB or less

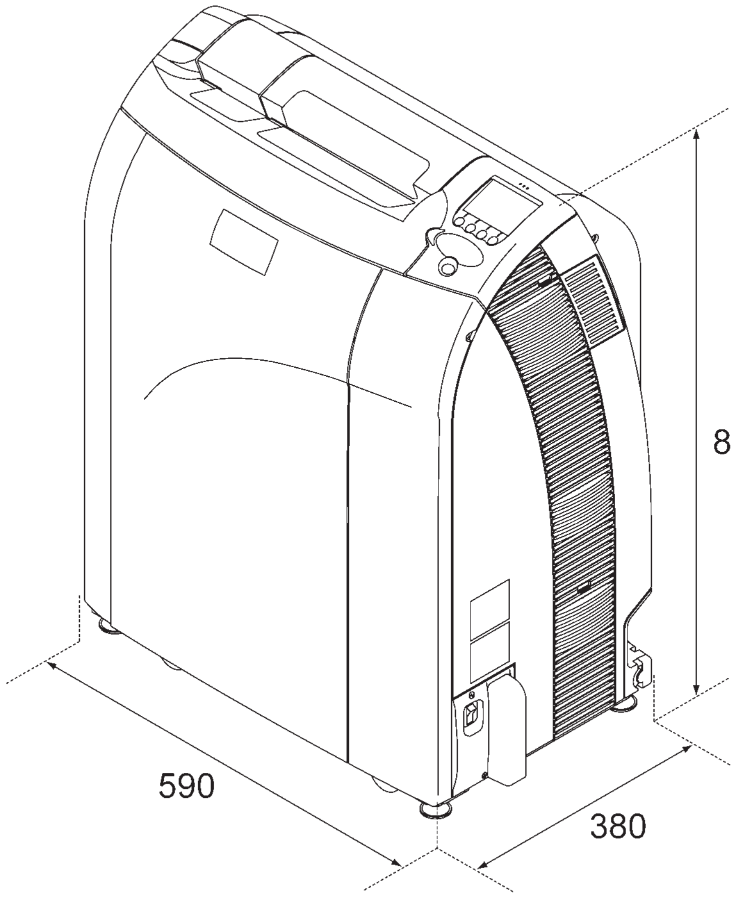
■ Warm-up Time

- **Power non-interlinked setting (when RU is started up alone)**
  42 seconds or less
- **Power interlinked setting (when RU is started up by CR Console)**
  98 seconds or less

1.6 Dimensions, Weight, and Center of Gravity

■ Dimensions

W590 × D380 × H810 (mm) (except protrusions)



Unit: mm

FRCH0501.EPS

■ Weight

98 kg

■ Center of Gravity

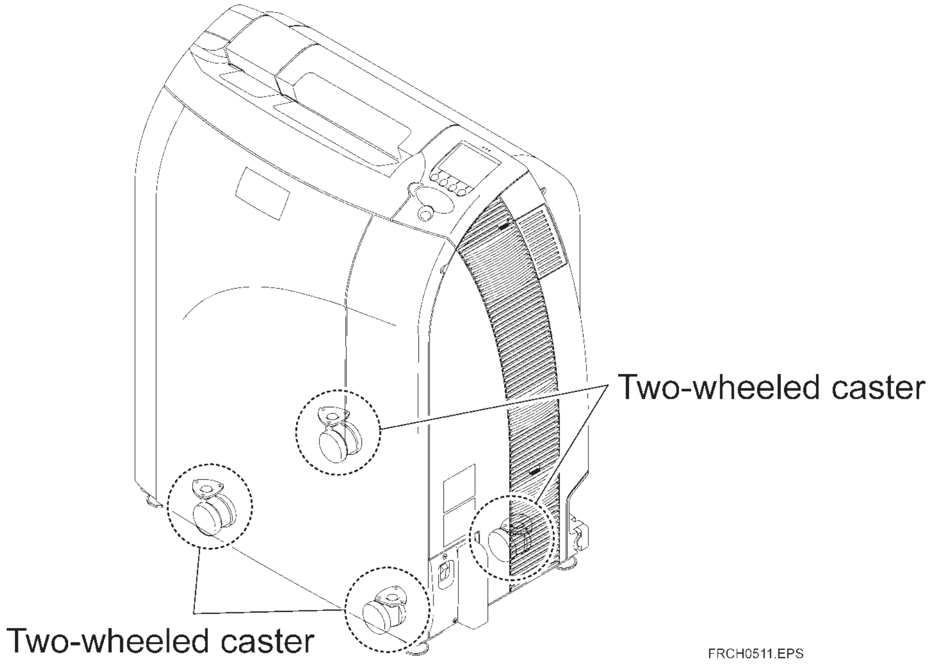
Height:	350 mm approx.
From right-hand side:	290 mm approx.
From front:	200 mm approx.

◆ **NOTE** ◆

The center of gravity is as measured from the adjustable foot.

1.7 Moving Means for the Machine

Two-wheeled casters (direction-variable/without brake): Four casters

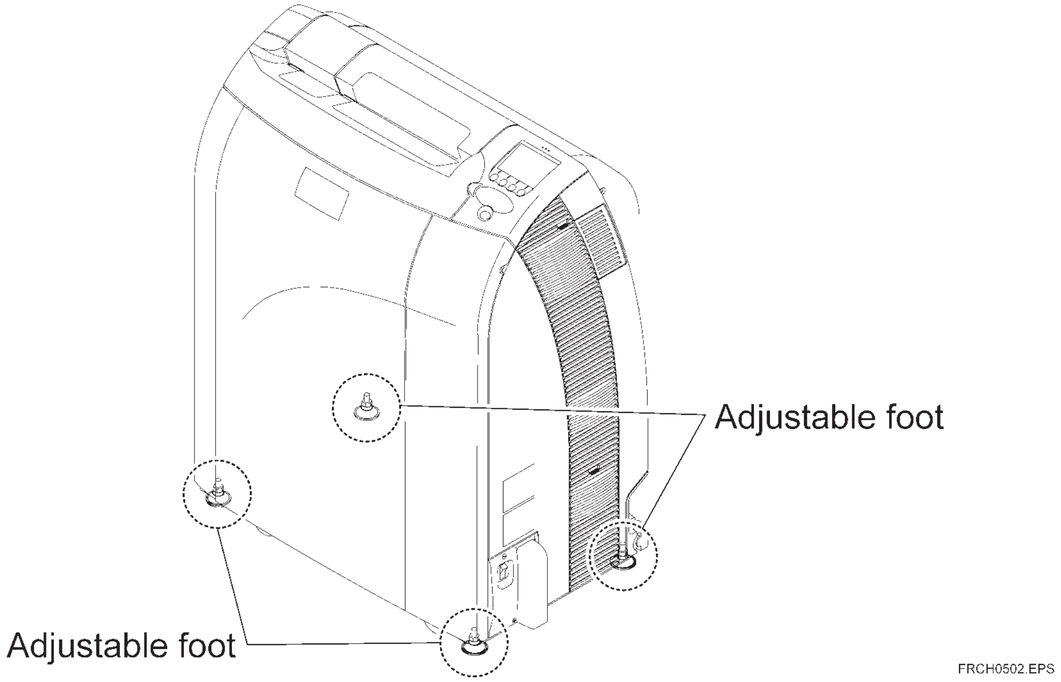

Two-wheeled caster
Two-wheeled caster
FRCH0511.EPS

1.8 Retaining Means for the Machine

The following two kinds of retaining means of the machine are available.
- Retaining on the adjustable feet
- Retaining through the use of a anti-topple retainer

1.8.1 Retaining the Machine on Adjustable Feet

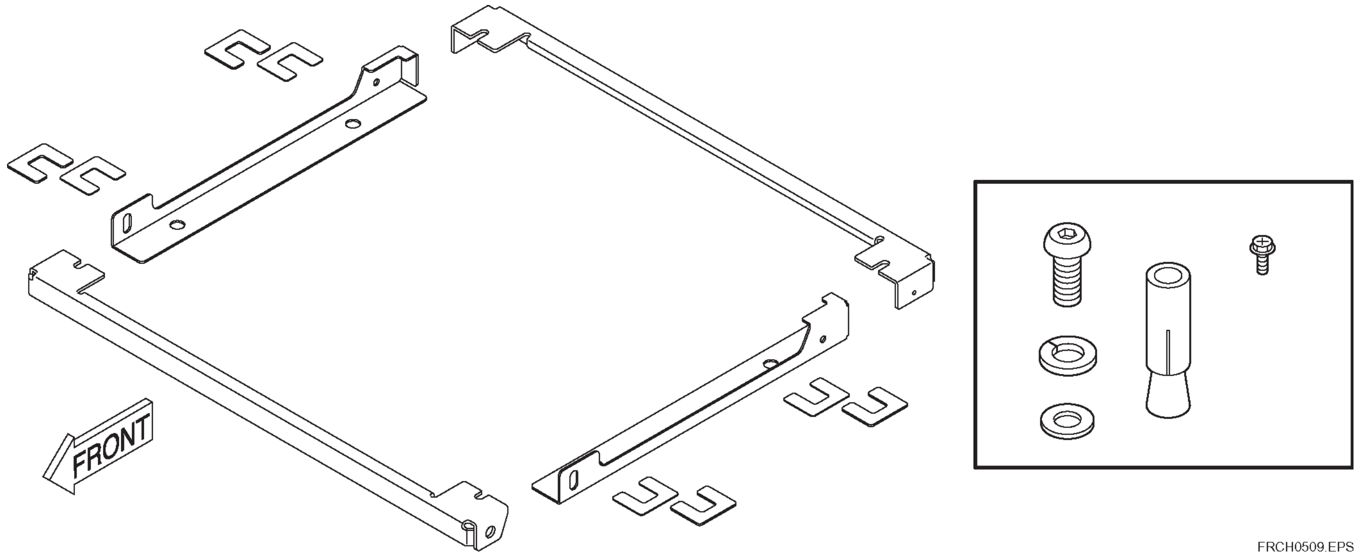
The machine is fixed by four adjustable feet.
The long cassette cannot be used while the machine is fixed by the adjustable feet.


Adjustable foot
Adjustable foot
FRCH0502.EPS

1.8.2 Retaining the Machine by Use of Anti-Topple Retainer

The machine is fixed through the use of an optional anti-topple retainer in the following cases:

- When the machine is to be fixed to the floor through the use of the safety as required by the user;
- When the long cassette is to be used;

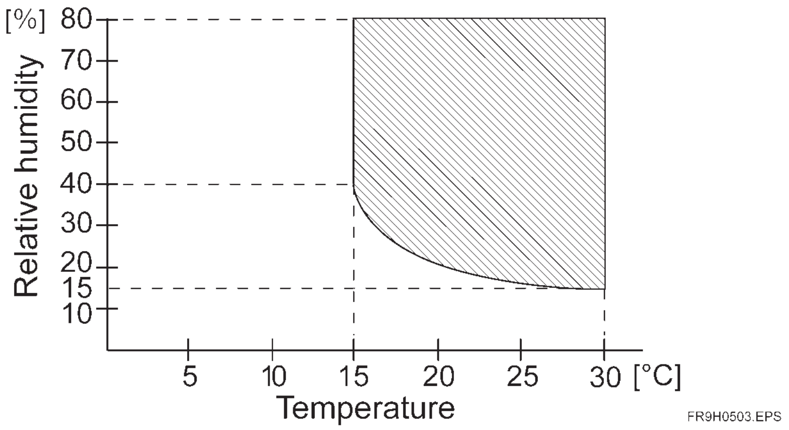


1.9 Environmental Conditions

■ Climate Conditions

- **Operating**

  Temperature: 15 °C (40%) to 30 °C (80 %)
  Relative humidity: 15 % RH (30 °C) to 80 % RH (30 °C) (without moisture condensation)
  Atmospheric pressure: 750 to 1060 hPa



- **Non-operating**

  Temperature: 0 to 45 °C (Should not freeze)
  Relative humidity: 10 to 90% RH (without moisture condensation)
  Atmospheric pressure: 750 to 1060 hPa

- **Transit/storage**

  Temperature: -10 to 50 °C (Should not freeze)
  Relative humidity: 10 to 90 % RH (without moisture condensation)
  Atmospheric pressure: 750 to 1060 hPa

■ Floor (Machine Surface) Vibration

10 to 55 Hz in frequency and 0.015 mm or less in amplitude

■ Floor Levelness

10 mm/m (inclination: 1/100 or less), for front, rear, right, and left

■ Floor Flatness

10 mm/m or less

■ Variable Magnetic Field

DC 0.3 Gauss or less

1.10 Electrical Specifications

■ Frequency

Single-phase, 50-60 Hz, ±3%

■ Input Voltage

Single-phase, 100-240 VAC ±10%

■ Rated Amperage

Single-phase, 100-240 VAC, 50-60 Hz : 5 A

■ Power Consumption

Operating:	200 VA or less
Standby:	100 VA or less
Remote standby:	20 VA or less

■ Grounding

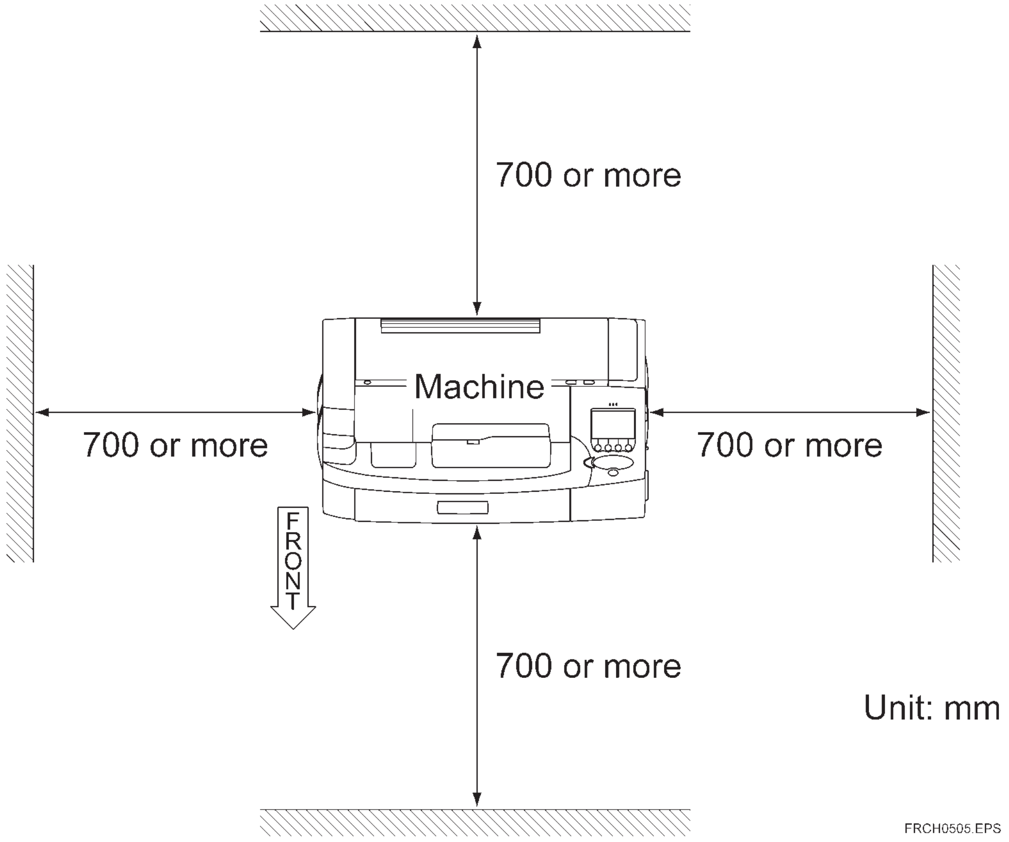
Class D grounding (former Class 3 grounding) (100 Ω or less)

■ Overload Protection

10 A

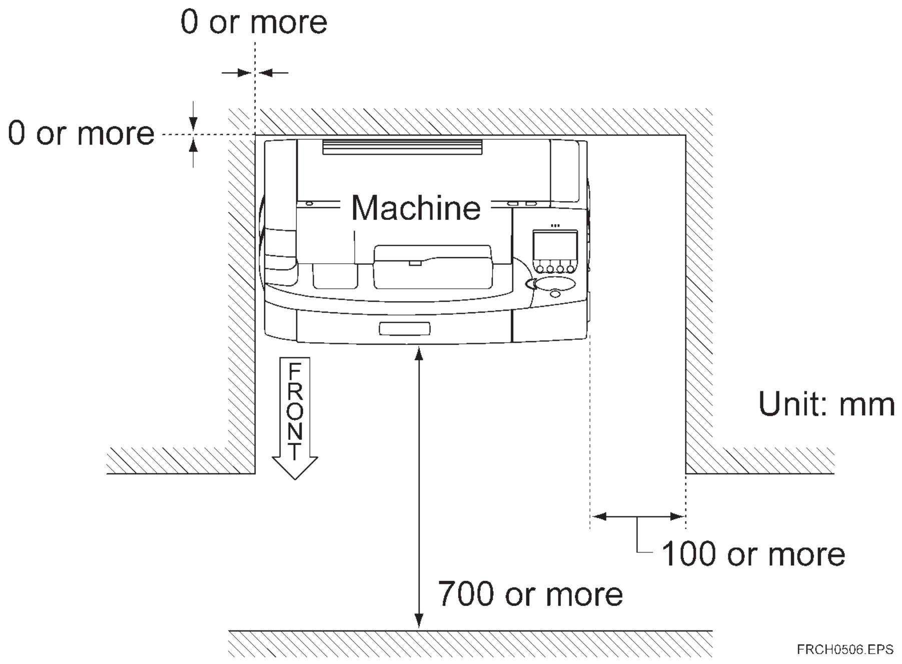
1.11 Servicing Space

When servicing the machine, the space indicated below should be secured.


700 or more
Machine
700 or more
700 or more
FRONT
700 or more
Unit: mm
FRCH0505.EPS

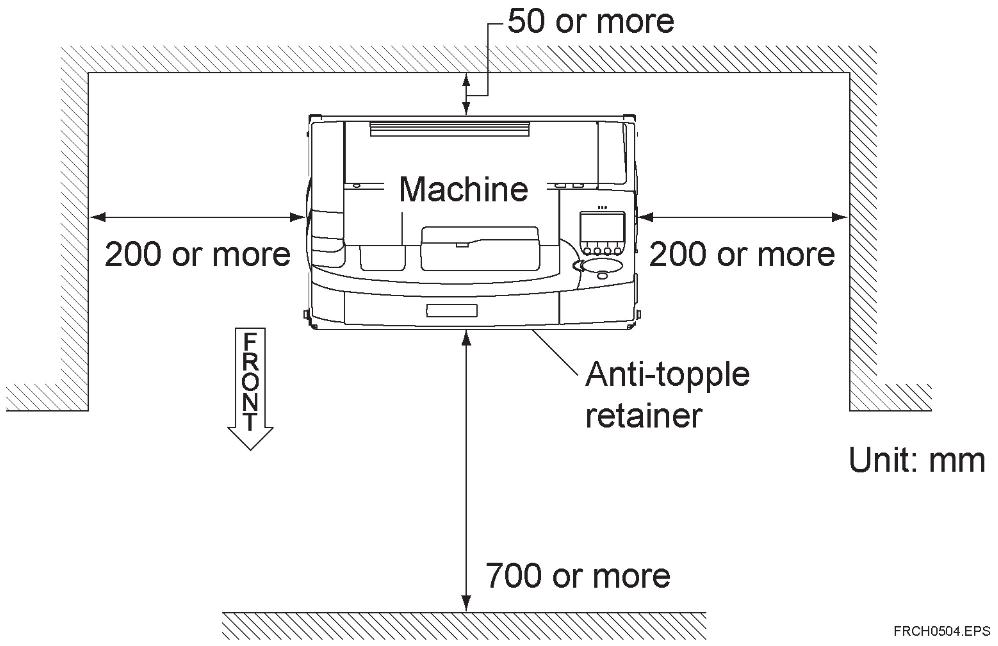
1.12 Installation Space

1.12.1 For Fixing by Adjustable Feet

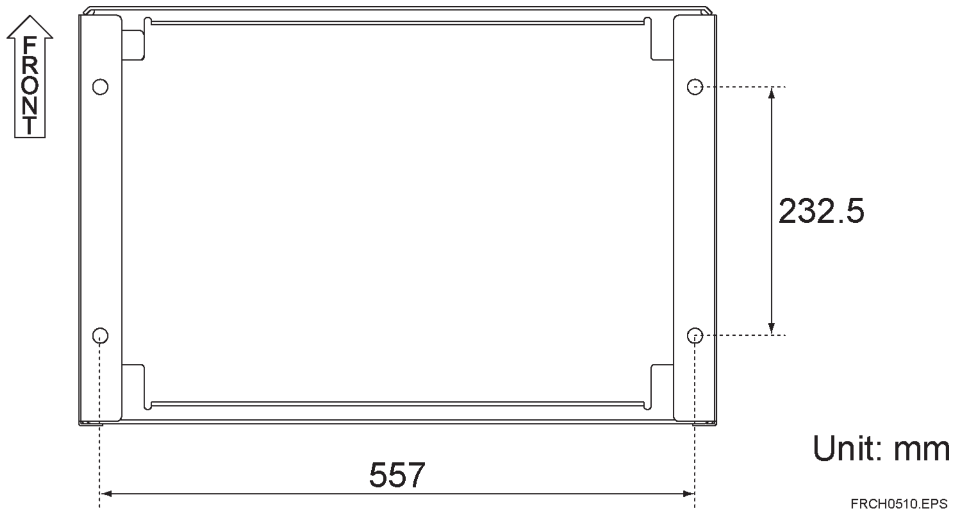

0 or more
0 or more
Machine
FRONT
Unit: mm
100 or more
700 or more
FRCH0506.EPS

1.12.2 Retaining the Machine by the Anti-Topple Retainer

- **Top view**

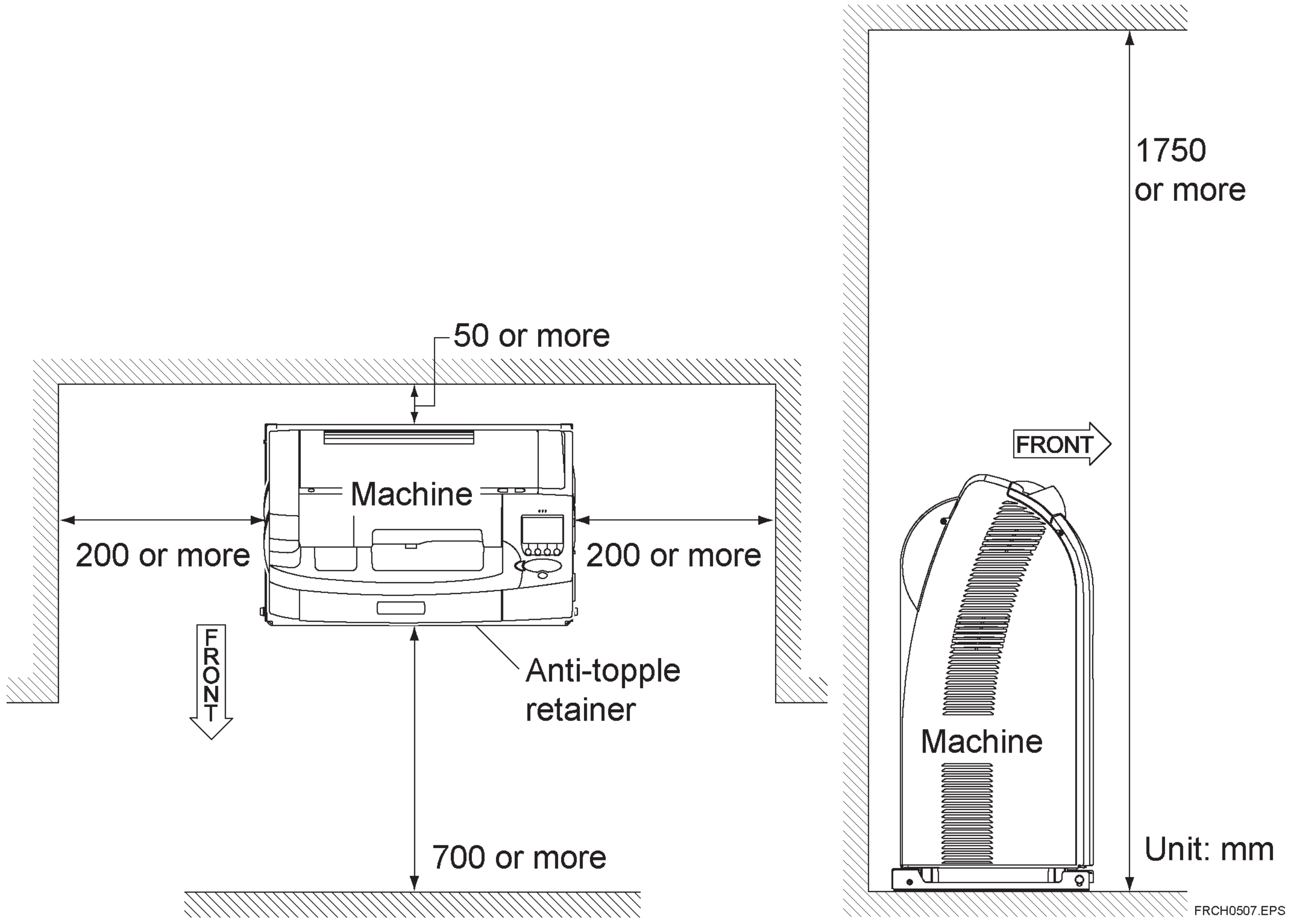

50 or more
Machine
200 or more
200 or more
FRONT
Anti-topple retainer
Unit: mm
700 or more
FRCH0504.EPS

- **Location of holes for the anti-topple retainer**

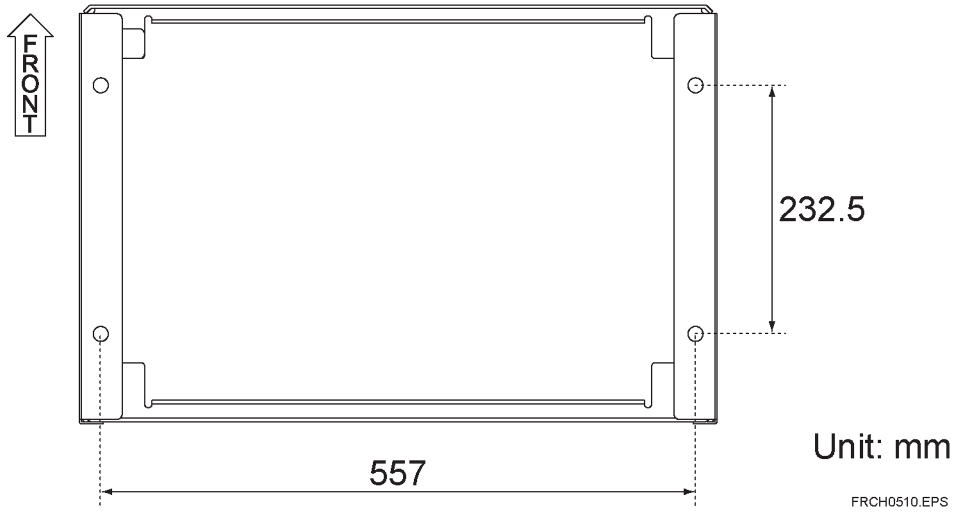

FRONT
232.5
Unit: mm
557
FRCH0510.EPS

1.12.3 Installing the Machine where the Long Cassette Is to Be Used

- **Top view and side view**

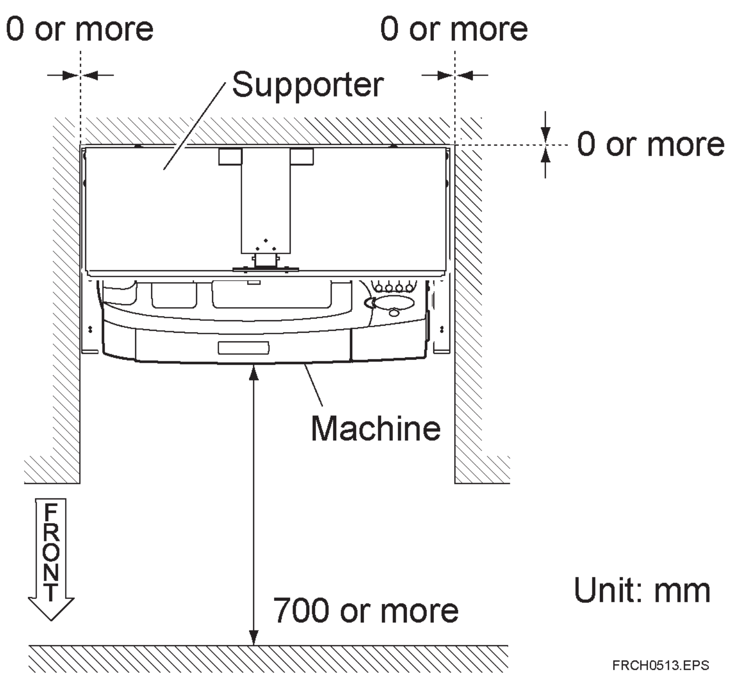

1750 or more
50 or more
FRONT
Machine
200 or more
200 or more
FRONT
Anti-topple retainer
Machine
700 or more
Unit: mm
FRCH0507.EPS

- **Location of holes for the anti-topple retainer**


FRONT
232.5
Unit: mm
557
FRCH0510.EPS

1.12.4 Using the Supporter

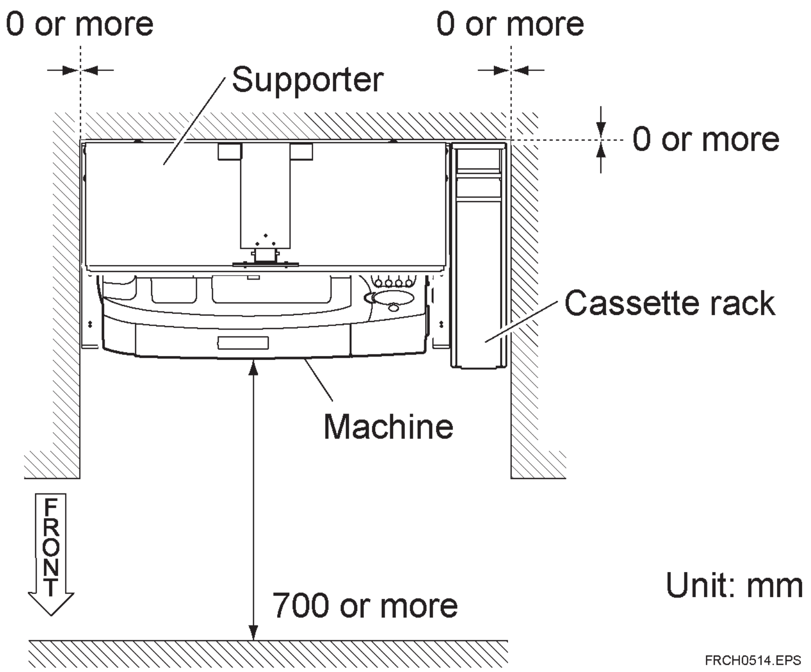
- **Installation space required for the supporter only**


0 or more
0 or more
Supporter
0 or more
Machine
FRONT
700 or more
Unit: mm

FRCH0513.EPS

- **Installation space required when the cassette rack is attached to the supporter**

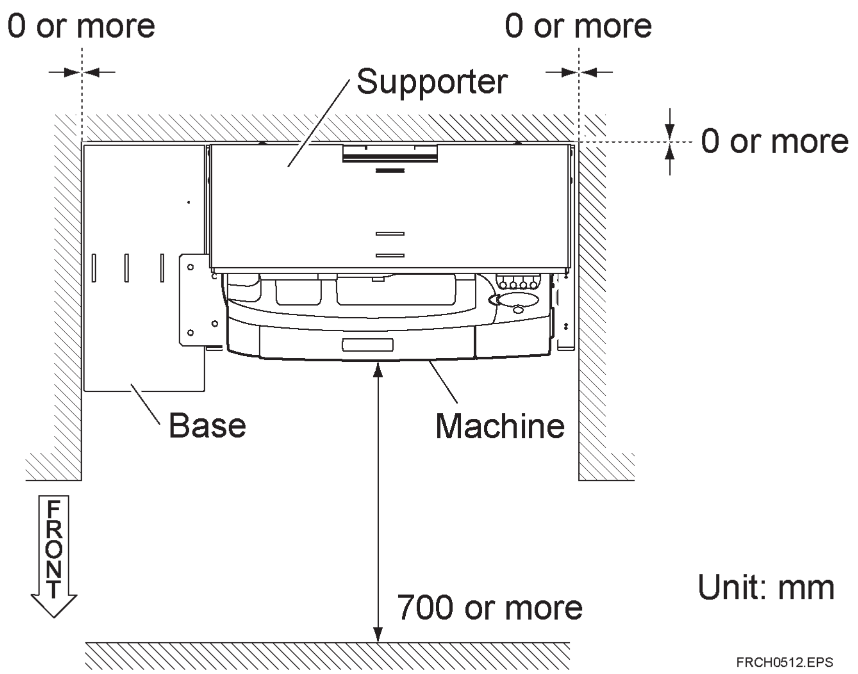
The cassette rack mounting position and installation space are left-right symmetrical.


0 or more
0 or more
Supporter
0 or more
Cassette rack
Machine
FRONT
700 or more
Unit: mm

FRCH0514.EPS

- **Installation space required when the base is attached to the supporter**

The base mounting position and installation space are left-right symmetrical.


0 or more
0 or more
Supporter
0 or more
Base
Machine
FRONT
700 or more
Unit: mm

FRCH0512.EPS

1.13 Disposal

1.13.1 Disposal of IP

Regarding the IP disposal, follow the instructions to dispose as laws are provided in each country and region. We will provide the product safety information as needed.

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Control Sheet

Issue date	Revision number	Reason	Pages affected
08.15.2005	00	New release (FM4683)	All pages
11.10.2005	01	Corrections (FM4750)	All pages

CR-IR 357 Service Manual

Machine Description (MD)

1. Machine Overview

1.1 Features

■ Features of the Machine

- **The machine is network connectable via TCP/IP (100BASE-TX).**
- **A commonly available power source may be used to supply power to the machine.**
- **Improved facility in inserting/removing cassettes**

  The cassette inserting entrance is slantly positioned, to improve facility in inserting/removing the cassette.
- **Removal of IP static electricity**

  IP static electricity is removed by the electrically-conductive ball bearing and bearing for each conveyance roller, as well as by the antistatic brush.

1.2 System Configuration

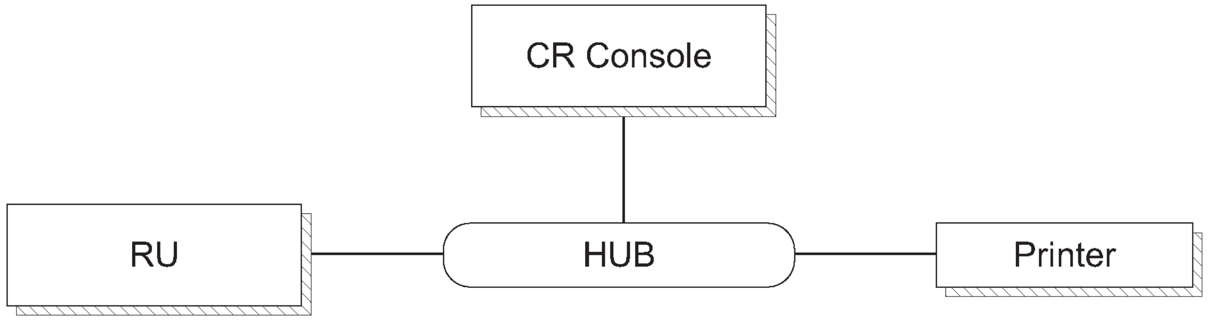
The machine (CR-IR357) may be connected to a network to achieve various system configurations.

Basic system configuration examples are described here.

■ System Configuration Example (1)

The machine is connected to the CR Console via a network.

A connection with the CR Console is established over Ethernet (100Base-TX).

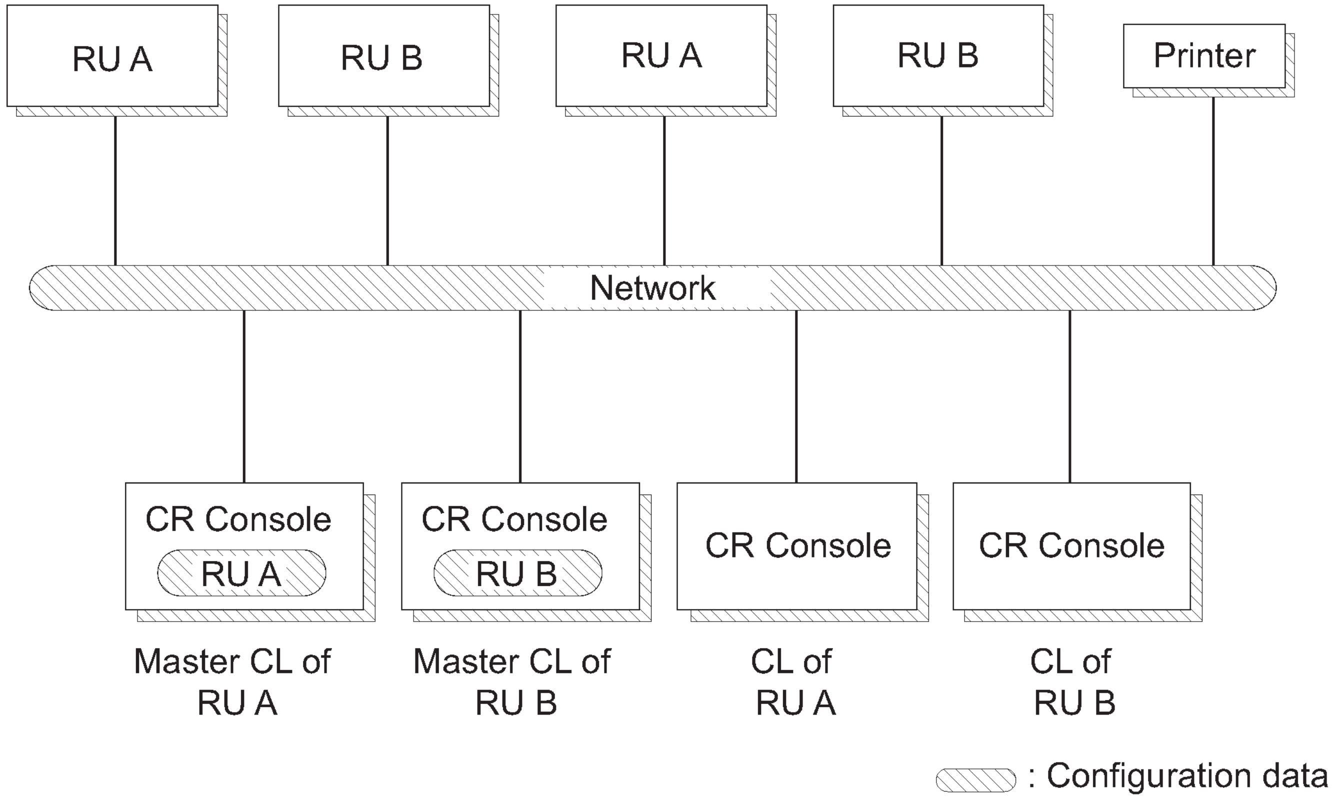

CR Console
RU
HUB
Printer

FRCH101024.EPS

■ System Configuration Example (2)

The machine may be connected to a plurality of CR Console, including a single master CL.

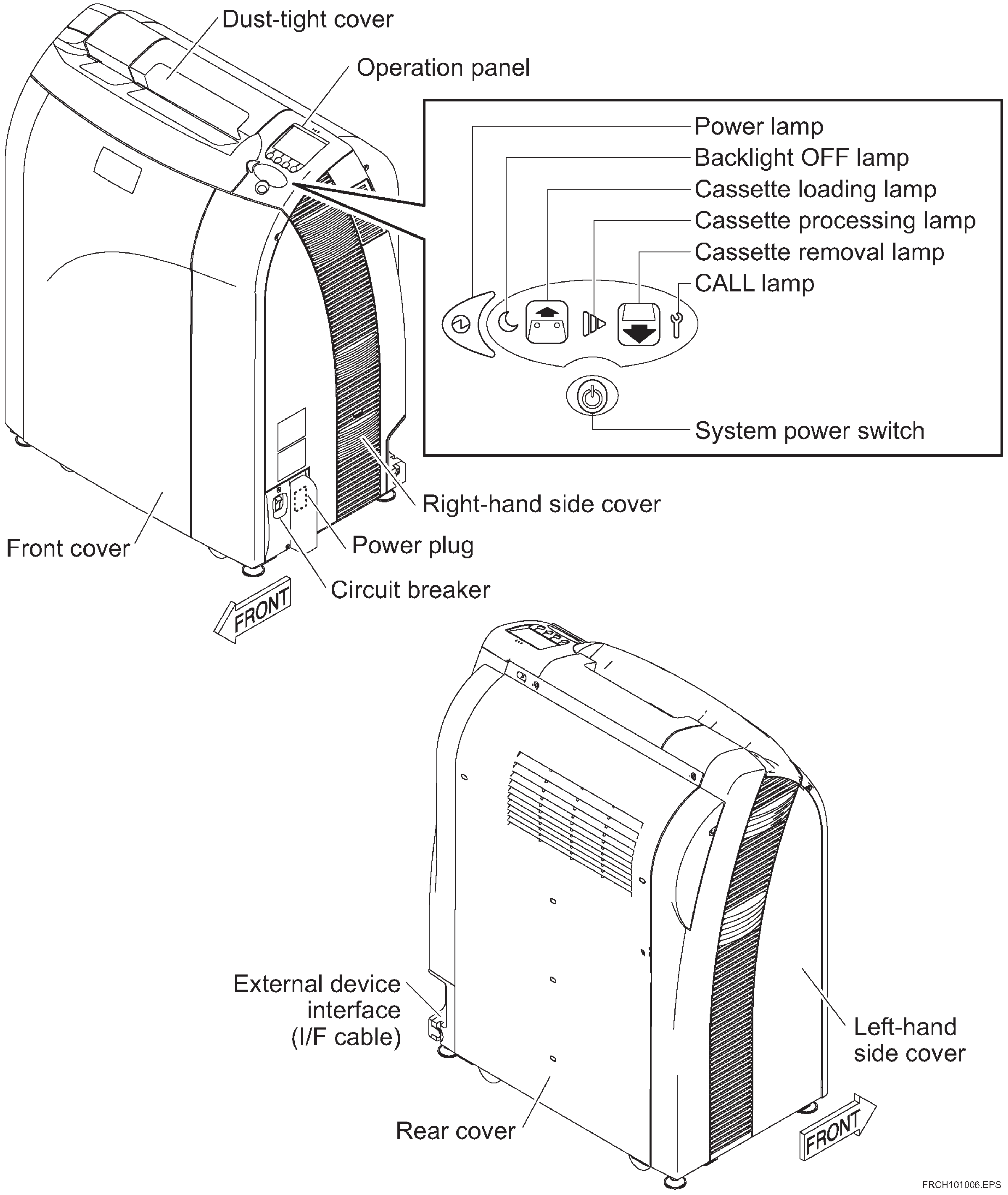
The master CL contains the RU's configuration data and other information.


RU A
RU B
RU A
RU B
Printer
Network
CR Console
RU A
CR Console
RU B
CR Console
CR Console
Master CL of RU A
Master CL of RU B
CL of RU A
CL of RU B
: Configuration data

FRCH101025.EPS

1.3 Overall Machine Configuration and Component Names

1.3.1 External View of Machine


Dust-tight cover
Operation panel
Power lamp
Backlight OFF lamp
Cassette loading lamp
Cassette processing lamp
Cassette removal lamp
CALL lamp
System power switch
Right-hand side cover
Power plug
Front cover
Circuit breaker
FRONT
External device interface (I/F cable)
Left-hand side cover
Rear cover
FRONT
FRCH101006.EPS

1.3.2 Nomenclature and Functions

Name	Function
Operation Panel	Operation panel for the RU main body.
System power switch	Power switch for the RU. When this switch is pressed with the system power switch in the RU setting and the circuit breaker in the ON state, the RU is powered ON.
Power lamp	It is lit (in green) when the circuit breaker is pushed in the "I" position and power is turned ON. Since the circuit breaker remains in the ON state, the POWER lamp is always lit.
Cassette loading lamp	It is lit (in green) when the RU starts up normally, indicating that cassette loading is ready. While it is not lit, a cassette cannot be loaded.
Cassette processing lamp	It is lit (in green) while the cassette loaded into the RU is being processed. It blinks when the IP erasure is complete and goes out when the IP is ejected to the cassette.
Cassette removal lamp	It is lit (in blue) when removal of a processed cassette is ready.
Backlight OFF lamp	It blinks (in green) when the RU comes into the HIBERNATION mode.
CALL lamp	It is lit (in yellow) when an error of level 0 or level 1 occurs.
Circuit breaker	ON (1): Main power ON OFF (0): Main power OFF Keep ON for usual operation.

1.3.3 Operation Panel Display Screen Contents

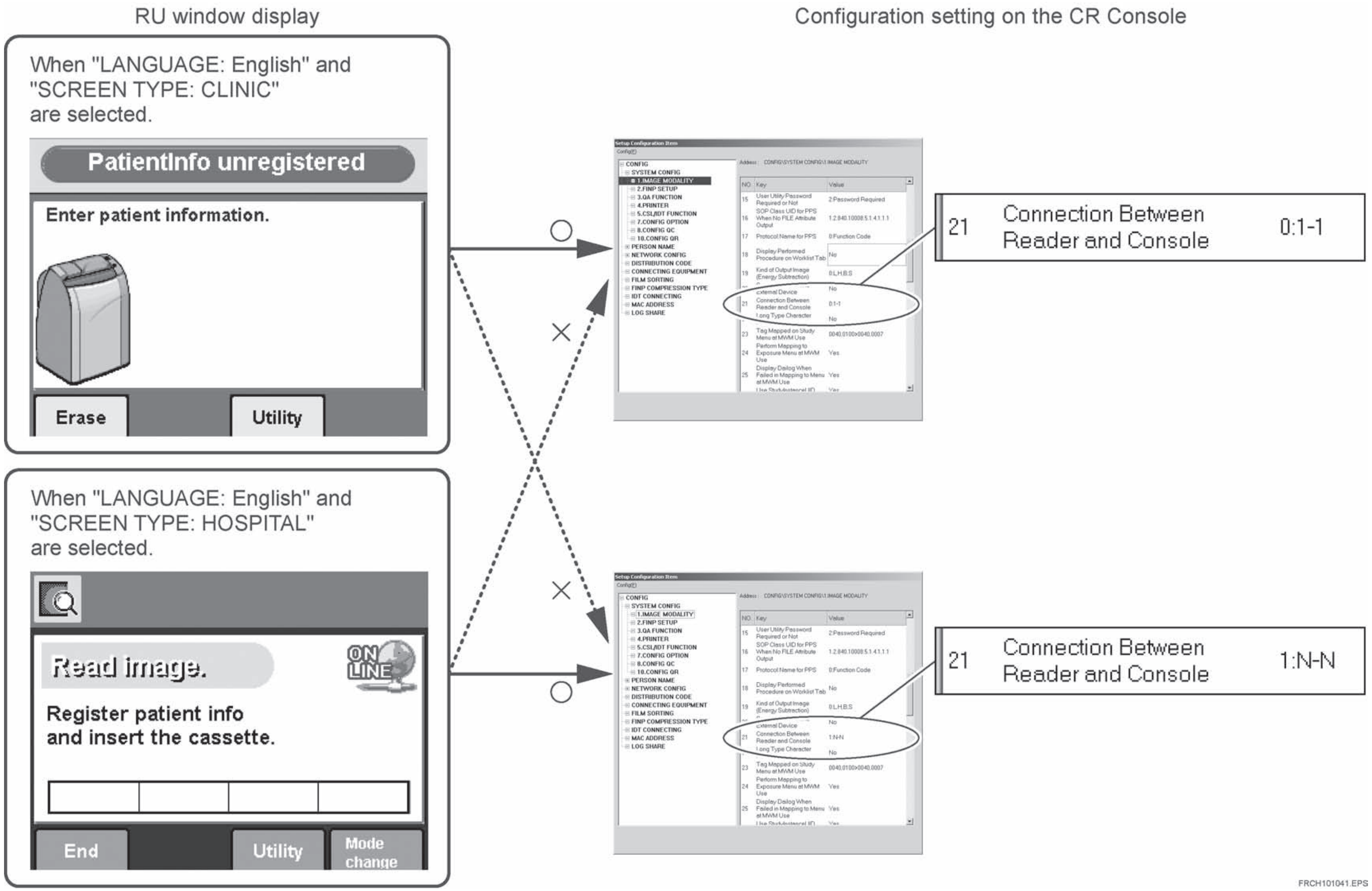
The language to be displayed on the operation panel and the window vary as shown below depending on the “LANGUAGE” and “SCREEN TYPE” selected at the time of installation of RU software.

◆ *NOTE* ◆

The Configuration setting on the CR Console need be changed according to the “SCREEN TYPE” of the RU. The connection between the RU and the CR Console is not assured if different selection is made.

- When SCREEN TYPE is “CLINIC”, only “1:1 connection” is available.

- When SCREEN TYPE is “HOSPITAL”, only “N:N connection” is available.


RU window display
Configuration setting on the CR Console
PatientInfo unregistered
Erase
Utility
○
×
×
○
End
Utility
Mode change
ON LINE

When "LANGUAGE: English" and "SCREEN TYPE: CLINIC" are selected.

Enter patient information.

21 Connection Between Reader and Console 0:1-1

When "LANGUAGE: English" and "SCREEN TYPE: HOSPITAL" are selected.

Read image.

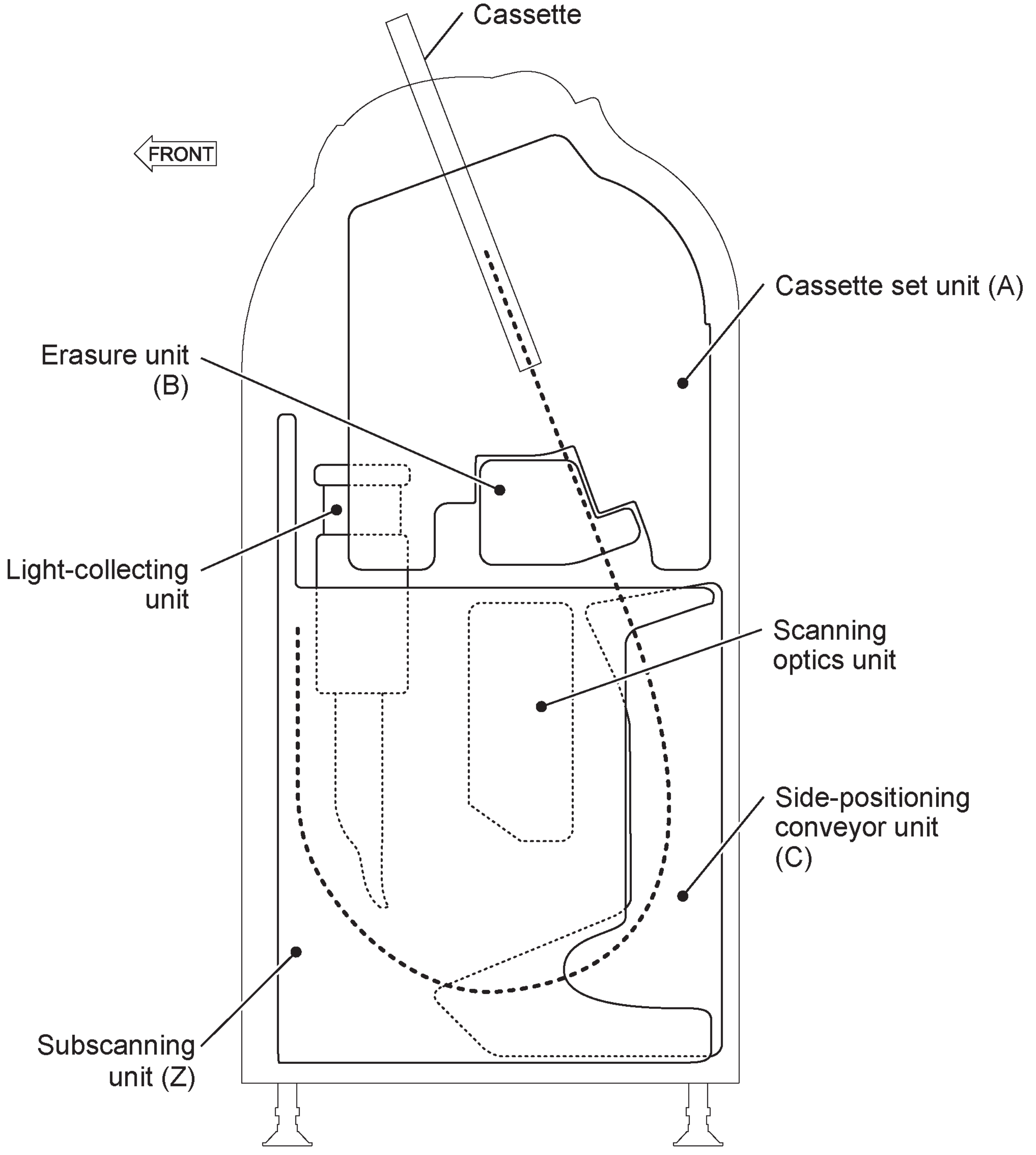
Register patient info and insert the cassette.

21 Connection Between Reader and Console 1:N-N

FRCH101041.EPS

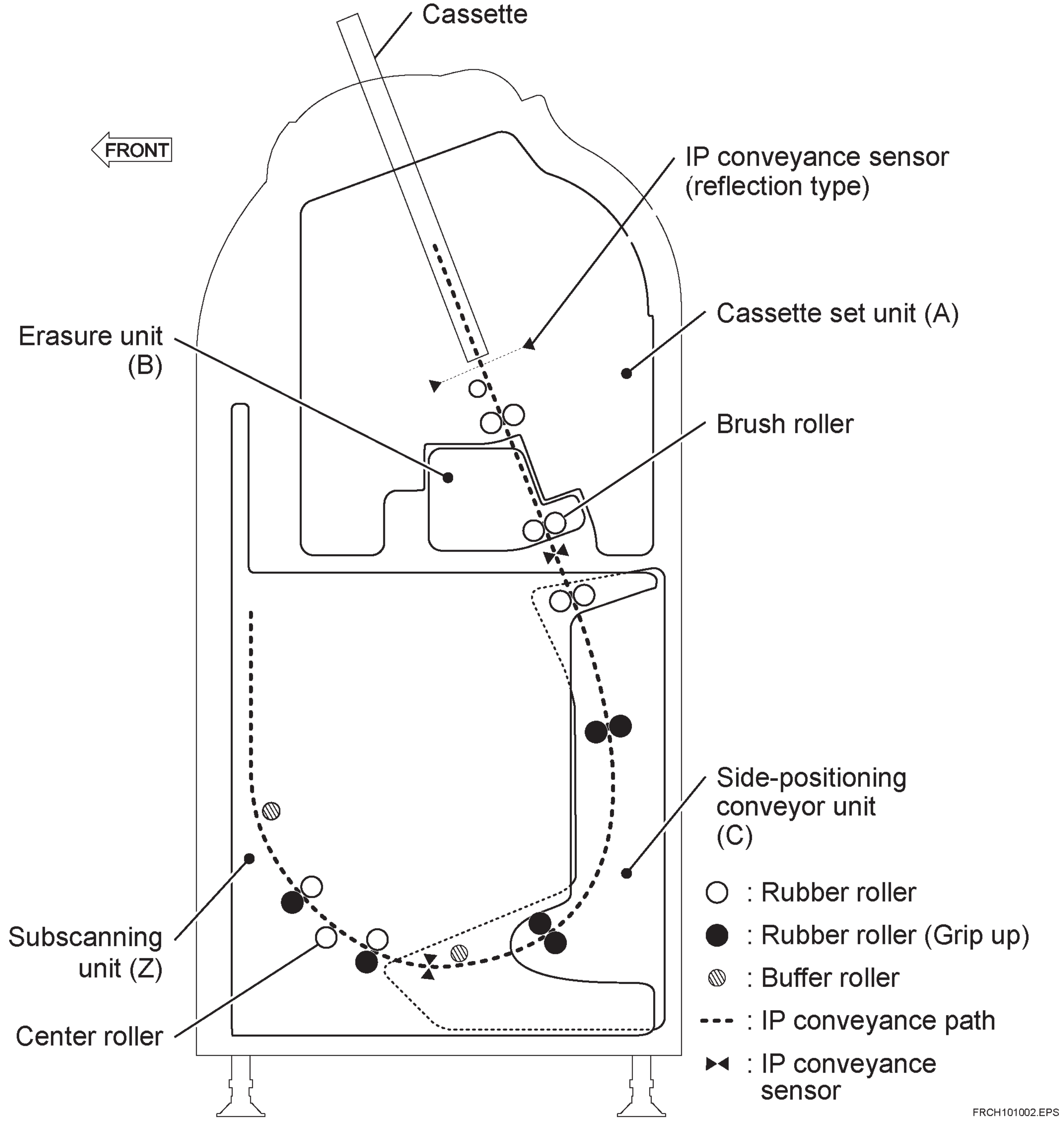
1.4 Machine Components

1.4.1 Unit Locations


Cassette
FRONT
Cassette set unit (A)
Erasure unit (B)
Light-collecting unit
Scanning optics unit
Side-positioning conveyor unit (C)
Subscanning unit (Z)

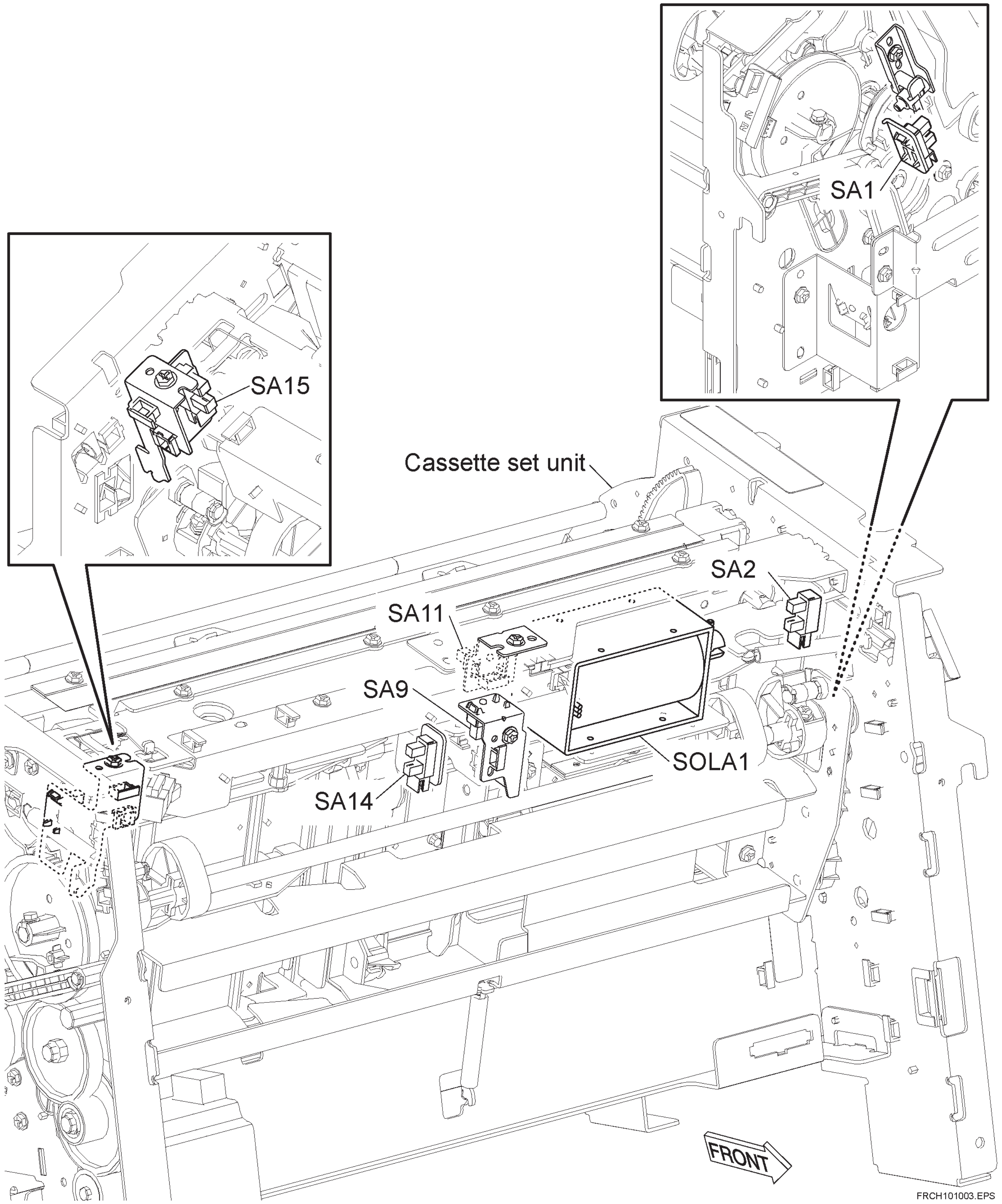
FRCH101001.EPS

1.4.2 Roller Locations and Conveyance Paths


Cassette
FRONT
IP conveyance sensor (reflection type)
Cassette set unit (A)
Erasure unit (B)
Brush roller
Side-positioning conveyor unit (C)
Subscanning unit (Z)
Center roller
○ : Rubber roller
● : Rubber roller (Grip up)
▨ : Buffer roller
- - - : IP conveyance path
▸◂ : IP conveyance sensor
FRCH101002.EPS

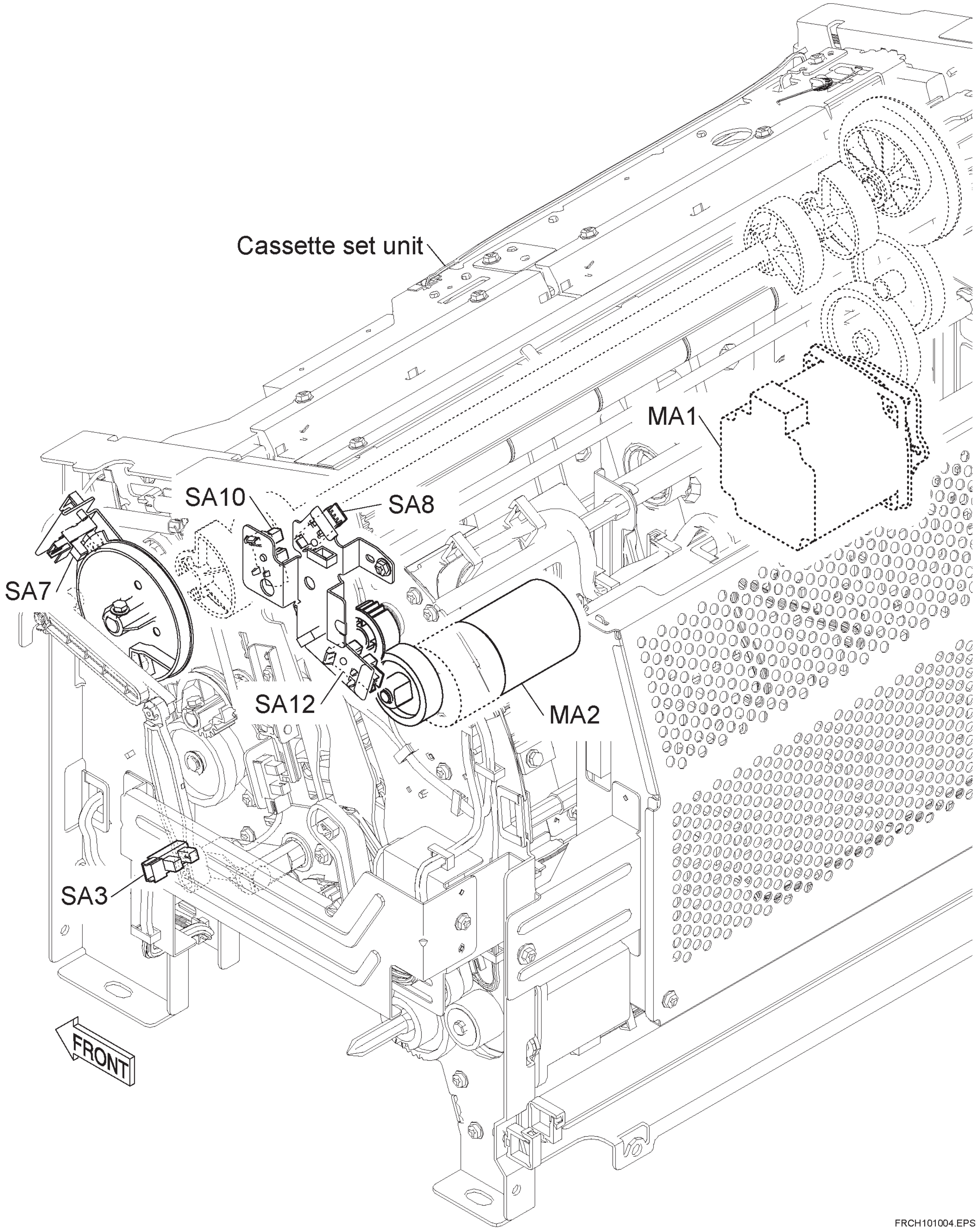
1.5 I/O Locations and Functional Descriptions

1.5.1 Cassette Set Unit - 1



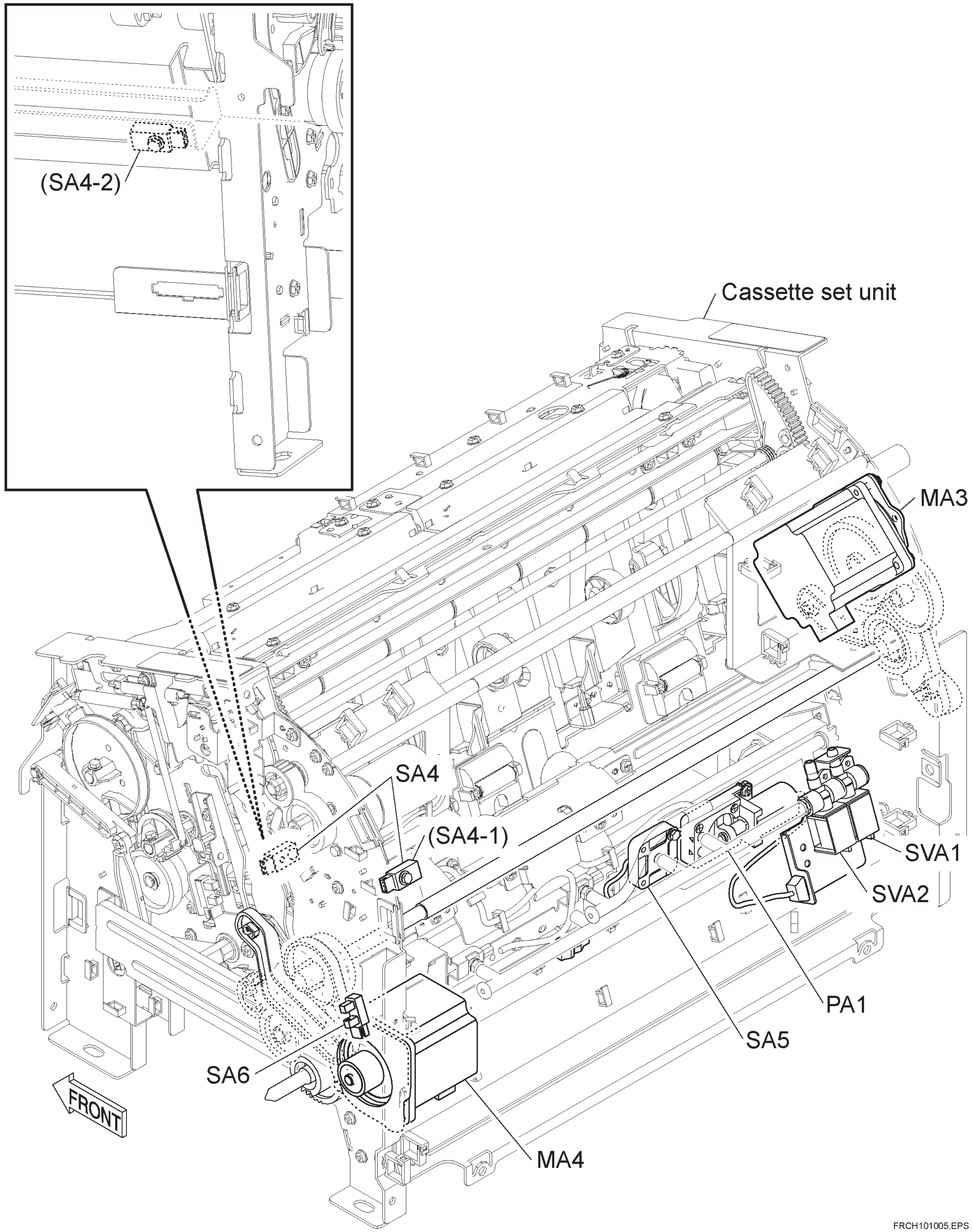
Symbol	Name	Type	Function	Reference
SA1	Cassette IN sensor	PI (5mm)	The sensor detects that the cassette is loaded, and is in CLOSE state when the cassette is loaded.	☞ {MD:5.2}
SA2	Cassette hold sensor	PI (5mm)	The sensor detects that the cassette is held, and is in CLOSE state when the cassette is held.	☞ {MD:5.2}
SA9	"15x30 cassette" identifying sensor	PI (5mm)	The sensor determines a 15x30 cassette. It is in OPEN state when the 15x30 cassette is inserted, and in CLOSE state when a cassette of another size is inserted.	☞ {MD:5.2}
SA11	Cassette ejection sensor	PI (5mm)	The sensor detects that the cassette is ejected, is in CLOSE state when the cassette is inserted, and in OPEN state when the cassette is ejected.	☞ {MD:5.2}
SA14	Cassette insertion error sensor	PI (5mm)	The sensor is in OPEN state when a small-size cassette is loaded. It is in CLOSE state together with SA15 when a large-size cassette is loaded. Wrong insertion of the cassette is indicated when the SA14 is in CLOSE and the SA15 is in OPEN.	☞ {MD:5.2}
SA15	Large cassette size sensor	PI (5mm)	The sensor detects that a large-size cassette is loaded, and is in CLOSE state when the large-size cassette is loaded.	☞ {MD:5.2}
SOLA1	Cassette hold pin solenoid	Power down solenoid	Holds/releases the cassette hold pin. The sensor is in OFF state when holding and in ON state when releasing.	☞ {MD:5.2}

1.5.2 Cassette Set Unit - 2



Symbol	Name	Type	Function	Reference
SA3	Debris fall prevention shutter sensor	PI (5mm)	The sensor detects whether the anti-foreign-matter shutter opens or closes, is in CLOSE state when the anti-foreign-matter shutter opens, and in OPEN state when the shutter closes.	☞ {MD:5.2}
SA7	Cassette cover opening mechanism HP sensor	PI (5mm)	The sensor detects that the IP retaining arm, the cassette cover-open mechanism and the anti-foreign-matter shutter are at the home position (HP), and is in CLOSE state when they are at the home position.	☞ {MD:5.2}
SA8	Cassette cover closing mechanism HP sensor	PI (5mm)	The sensor detects that the cover-close mechanism is at the home position, and is in CLOSE state when the mechanism is at the home position.	☞ {MD:5.2}
SA10	Cassette IP holding sensor	PI (5mm)	The sensor detects that the IP in the cassette is pressed, and is in OPEN state when the IP is pressed. It also detects whether a new cassette or an old cassette is inserted, is in OPEN state when the new cassette is inserted, and stays in CLOSE state when the old cassette is inserted.	☞ {MD:5.2}
SA12	Cassette cover CLOSE position sensor	PI (5mm)	The sensor detects that the cassette cover-close mechanism is at a close-cover position, and comes into CLOSE state.	☞ {MD:5.2}
MA1	Cassette cover opening mechanism driving motor	Two-phase pulse motor	Drives the IP retaining arm, the cassette cover-open mechanism and the anti-foreign-matter shutter.	☞ {MD:5.2}
MA2	Cassette cover closing mechanism driving motor	DC motor	Drives the cassette cover-close mechanism.	☞ {MD:5.2}

1.5.3 Cassette Set Unit - 3



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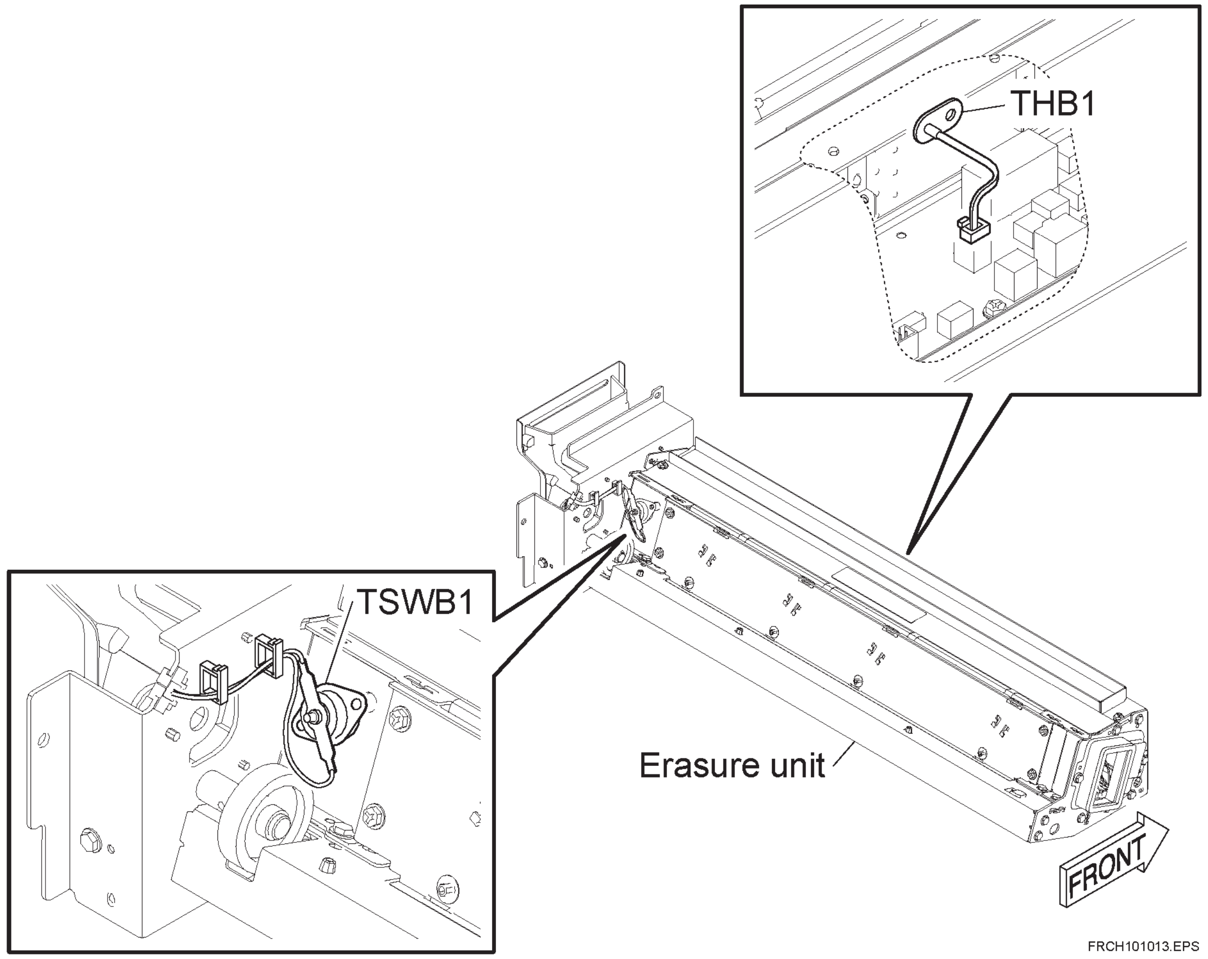
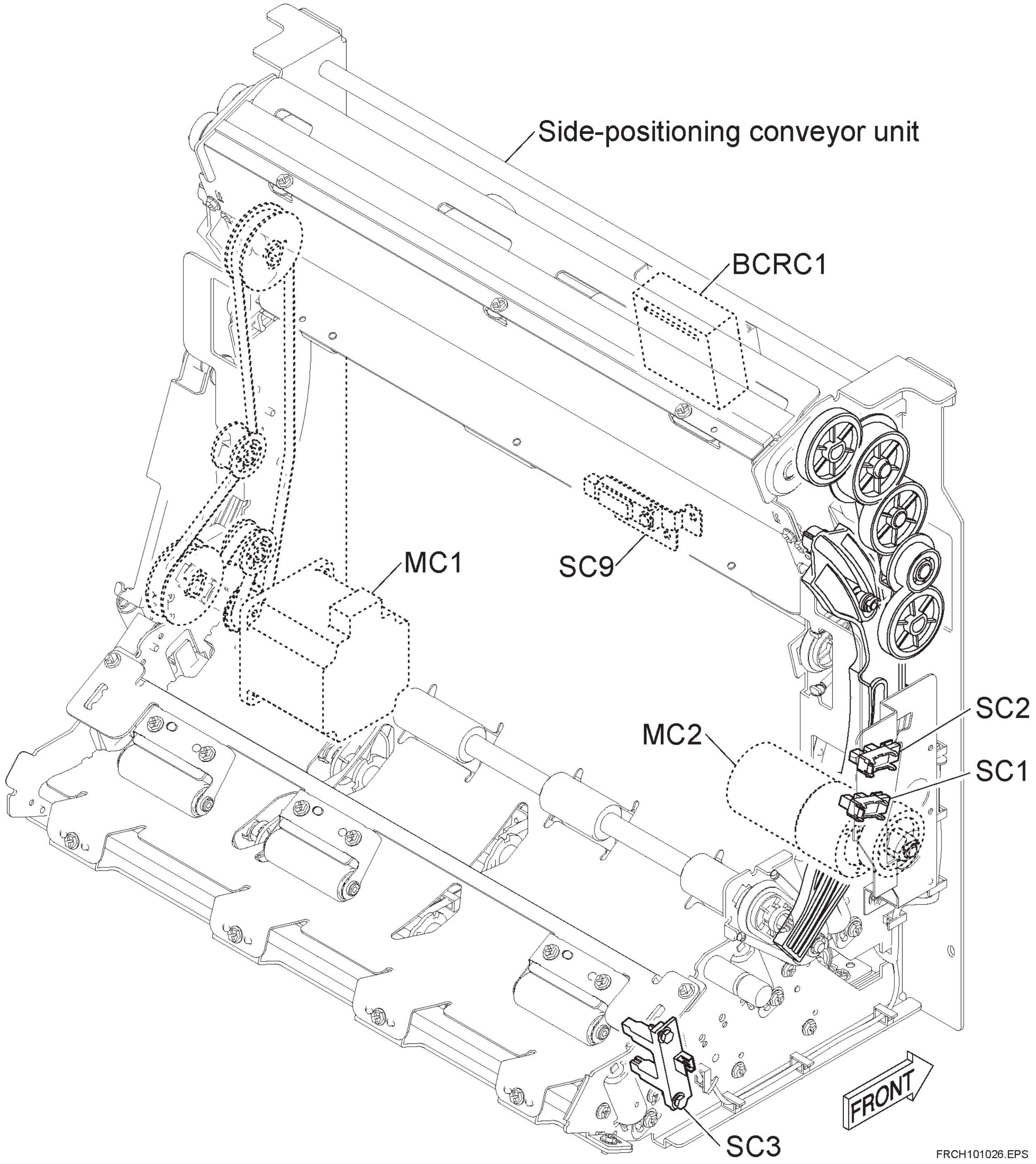
Symbol	Name	Type	Function	Reference
SA4 (SA4-1, SA4-2)	IP dropping sensor	Separate transmitting type sensor	The sensor detects that the IP drops. An error is detected when the sensor is in CLOSE state with the IP having dropped before suction, or when it is in CLOSE state after the IP is returned to the cassette and before the cassette cover closes. SA4-1: Light emitting side SA4-2: Light receiving side	☞ {MD:5.2}
SA5	IP Suction sensor	Pressure sensor	The sensor detects that the IP is sucked, and is in Open state when the IP is sucked and in Close state when the IP leaks.	☞ {MD:5.2}
SA6	Suction arm HP sensor	PI (5mm)	The sensor detects that the removal arm is at the home position, and is in CLOSE state when the arm is at the home position.	☞ {MD:5.2}
MA3	Suction arm driving motor	Two-phase pulse motor	Drives the removal arm.	☞ {MD:5.2}
MA4	IP transport motor	Two-phase pulse motor	Conveys the IP.	☞ {MD:5.2}
PA1	IP suction pump	DC pump	Sucks the IP. It sucks the IP when turned ON.	☞ {MD:5.2}
SVA1	IP air-leak valve	Solenoid valve	Leaks the IP from the suction cup. It leaks the IP when turned ON.	☞ {MD:5.2}
SVA2	IP suction path changeover valve	Solenoid valve	Changes over the suction modes. ON: Two suction disks suck an IP other than a pantomographic IP. OFF: One suction disk sucks the pantomographic IP.	☞ {MD:5.2}

1.5.4 Erasure Unit


THB1
TSWB1
Erasure unit
FRONT
FRCH101013.EPS

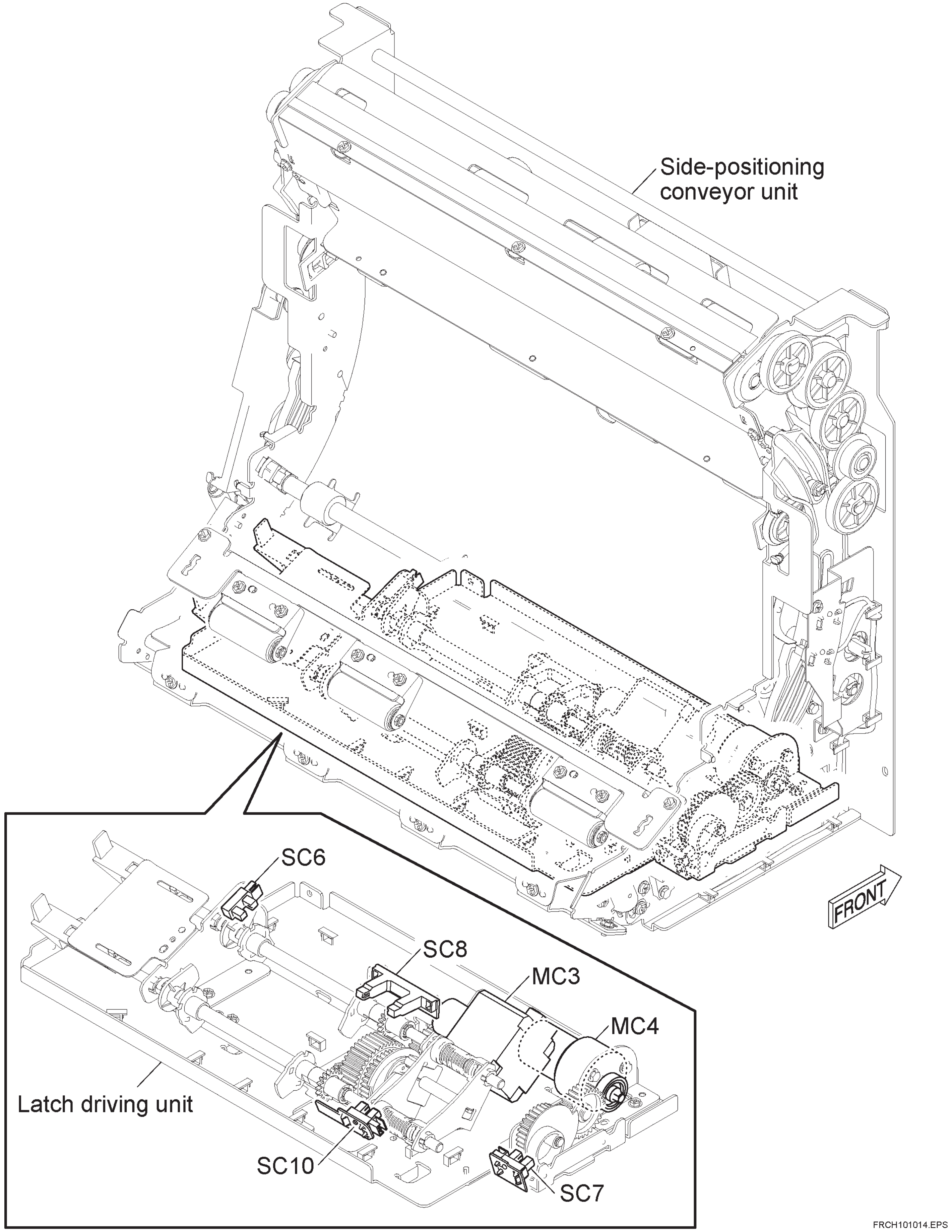
Symbol	Name	Type	Function	Reference
TSWB1	Thermal switch	Lamp temperature sensor	Safety switch against abnormal heat generation	☞ **{MD:3.2.2}**
THB1	Lamp temperature sensor	Thermistor	Detects the temperature in the lamp box of the erasure unit.	☞ **{MD:3.2.2}**

1.5.5 Side-Positioning Conveyor Unit - 1



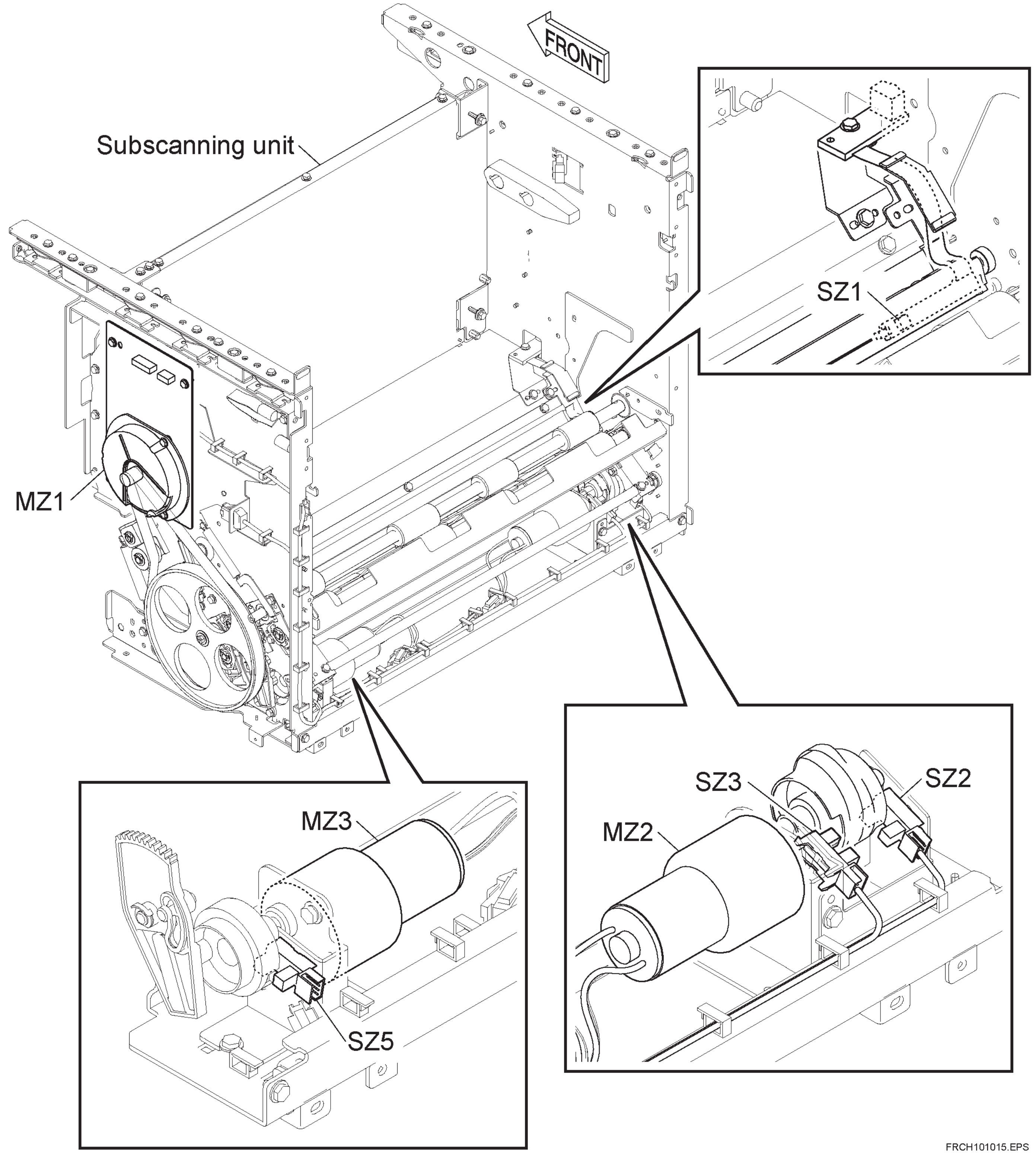
Symbol	Name	Type	Function	Reference
SC1	Side-positioning grip HP sensor	PI (5mm)	The sensor detects the home position of the grip mechanism (grip down), and is in OPEN state when the mechanism is at the home position.	☞ {MD:5.4}
SC2	Side-positioning grip release position sensor	PI (5mm)	The sensor detects that the grip mechanism is at the grip release position, and is in OPEN state when the mechanism is at the grip release position.	☞ {MD:5.4}
SC3	IP sensor 1	PI (19mm)	Detects the IP position when side-positioning the IP that has been conveyed.	☞ {MD:5.4}
SC9	"15x31/24x30 IP width" identifying sensor	Reflecting-type photo-sensor	Detects the size of remaining IPs during bootup.	☞ {MD:5.4}
BCRC1	Barcode reader	Barcode reader	Reads the IP barcode.	☞ {MD:5.4}
MC1	Side-positioning IP transport motor	Two-phase pulse motor	Conveys the IP.	☞ {MD:5.4}
MC2	Side-positioning conveyor roller grip release motor	DC motor	Grips/releases the grip roller.	☞ {MD:5.4}

1.5.6 Side-Positioning Conveyor Unit - 2



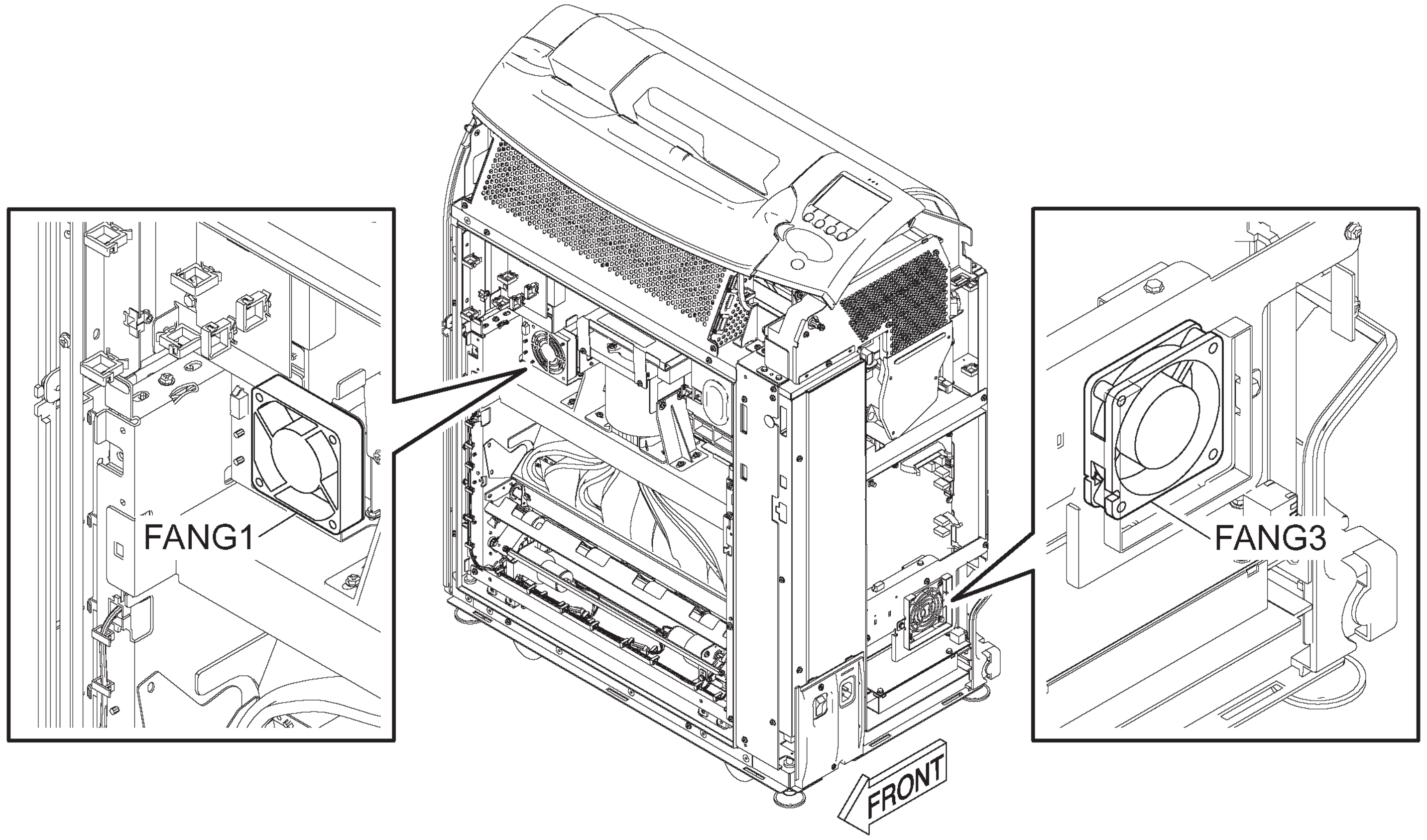
Symbol	Name	Type	Function	Reference
SC6	IP side-positioning HP sensor	PI (5mm)	Detects that the side-positioning mechanism is at the home position. The sensor is in CLOSE state when the mechanism is at the home position.	☞ {MD:5.4.1}
SC7	Side-positioning reference block HP sensor	PI (5mm)	Detects that the side-positioning reference frame is at the home position.	☞ {MD:5.4.2}
SC8	Side-positioning latch position sensor	PI (19mm)	Detects the side-positioning latch position for each IP size.	☞ {MD:5.4.1}
SC10	Side-positioning latch stroke sensor	PI (5mm)	Detects a pushed-in amount (stroke) of the side-positioning.	☞ {MD:5.4.3}
MC3	Side-positioning latch mechanism driving motor	Two-phase pulse motor	Drives the side-positioning latch mechanism. Protrudes the side-positioning latch in accordance with the IP size.	☞ {MD:5.4.1}
			Drives the side-positioning latch mechanism. Performs an IP side-positioning operation.	☞ {MD:5.4.3}
MC4	Side-positioning reference block driving motor	DC motor	Drives the side-positioning reference frame.	☞ {MD:5.4.2}

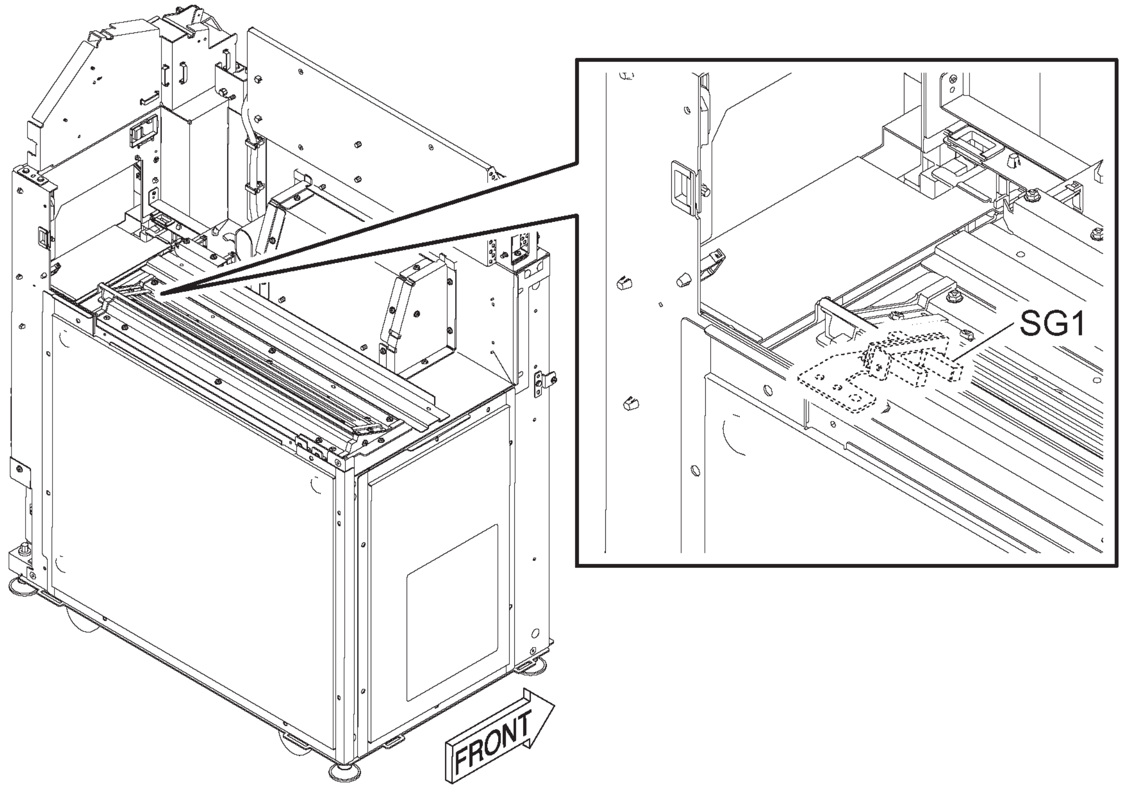
1.5.7 Subscanning Unit



Symbol	Name	Type	Function	Reference
SZ1	IP leading-edge sensor	Laser light-receiving element	Detects the tip of the IP to be read.	-
SZ2	Driven-side grip roller release HP sensor	PI (5mm)	Detects the gripping state of the driven grip roller.	☞ {MD:5.5.1}
SZ3	Driving-side grip roller release HP sensor	PI (5mm)	Detects the gripping state of the driving grip roller.	☞ {MD:5.5.1}
SZ5	Dust removal HP sensor	PI (5mm)	The sensor detects that the light-collecting mirror dust removal mechanism is at the home position, and is in OPEN state when the mechanism is at the home position.	-
MZ1	Subscanning motor	FFM	Conveys the IP.	-
MZ2	Driven/driving grip roller driving motor	DC motor	Grips/releases the driving grip roller and the driven grip roller.	☞ {MD:5.5.1}
MZ3	Dust removal motor	DC motor	Drives the dust removal mechanism to remove dust from the light-collecting guide and the mirror.	-

1.5.8 Housing





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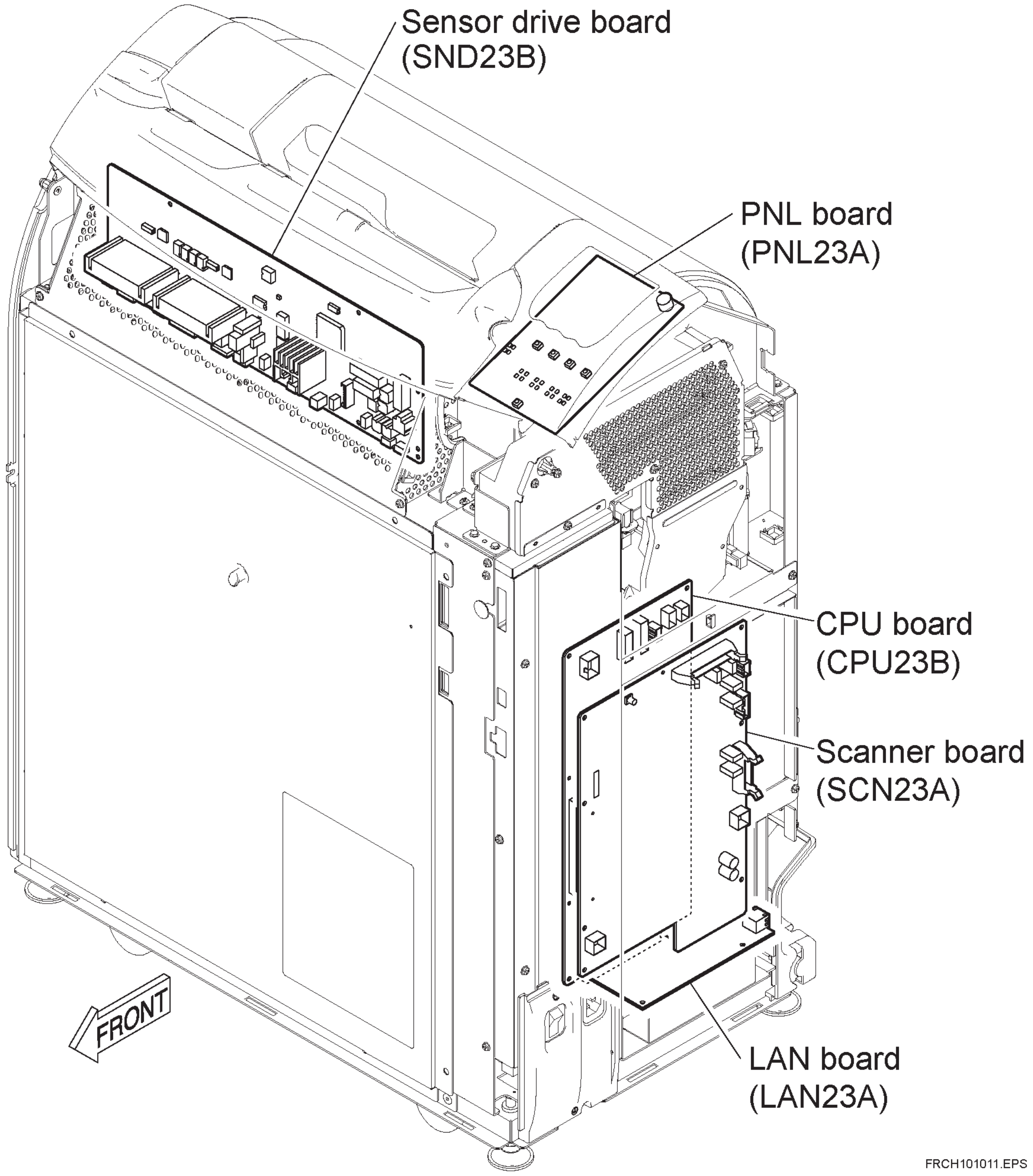
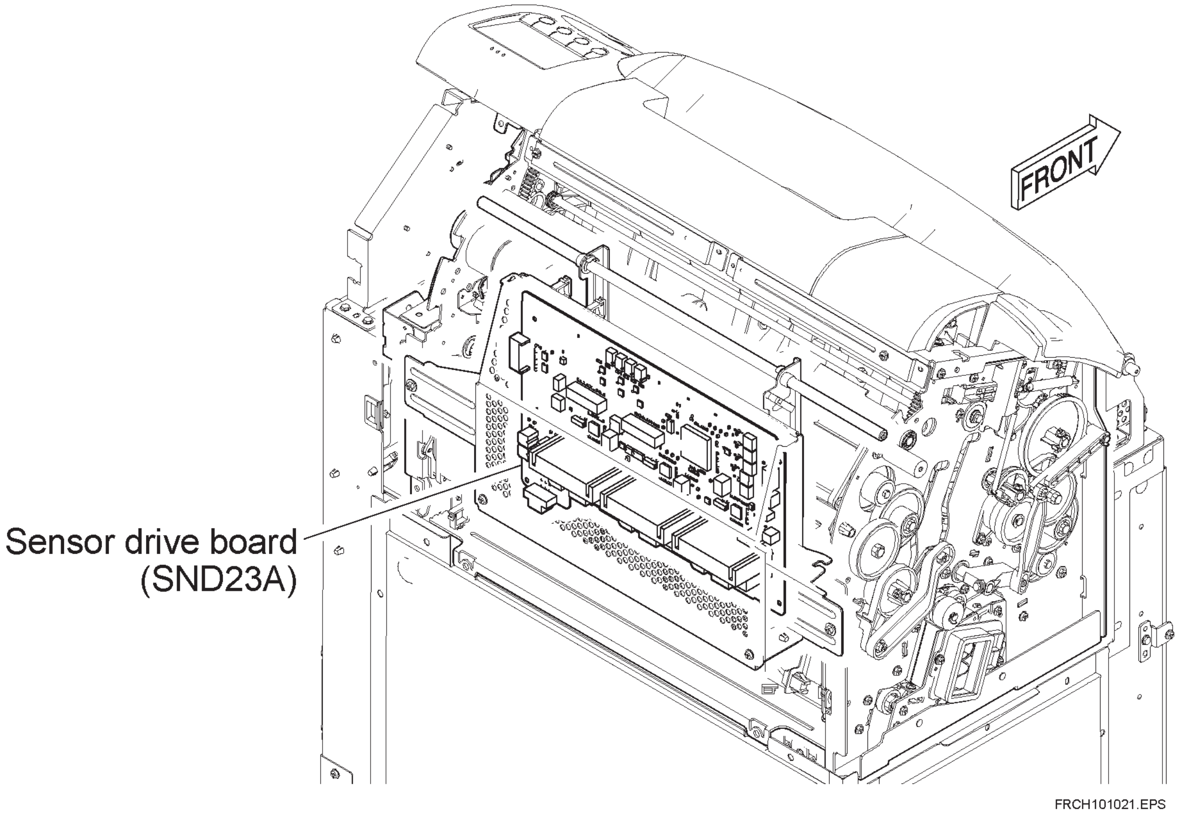
Symbol	Name	Type	Function	Reference
SG1	IP sensor 2	PI (19mm)	Detects that the IP being conveyed is present.	-
FANG1	Scanner unit cooling fan	DC fan	Stirs the air in the housing (scanner unit). (Can detect a rotation failure.)	-
FANG3	CPU board cooling fan	DC fan	Cools the control unit. (Cannot detect a rotation failure.)	-

1.6 Board Locations

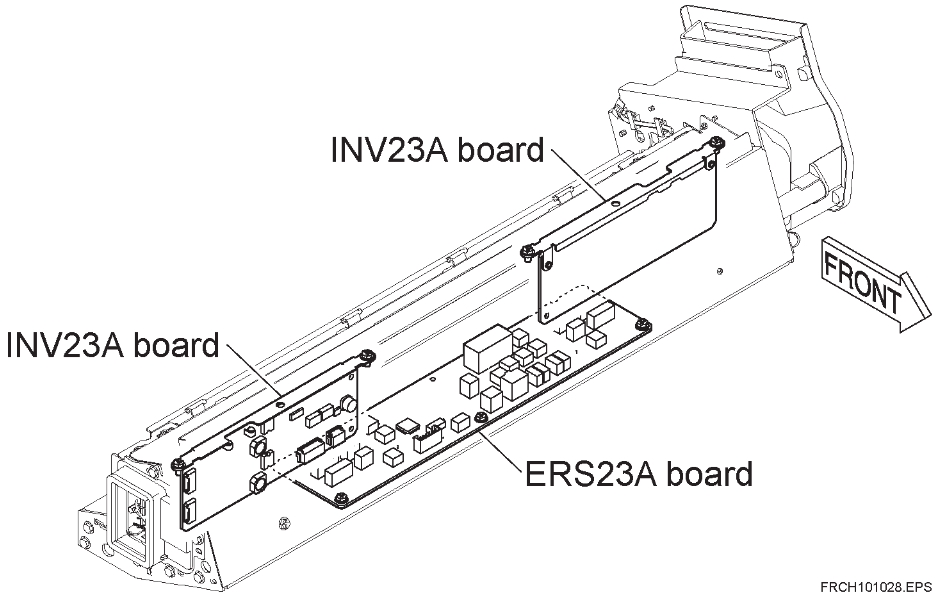
1.6.1 Housing


Sensor drive board
(SND23B)
PNL board
(PNL23A)
CPU board
(CPU23B)
Scanner board
(SCN23A)
LAN board
(LAN23A)
FRONT
FRCH101011.EPS

1.6.2 Cassette Set Unit


FRONT
Sensor drive board
(SND23A)
FRCH101021.EPS

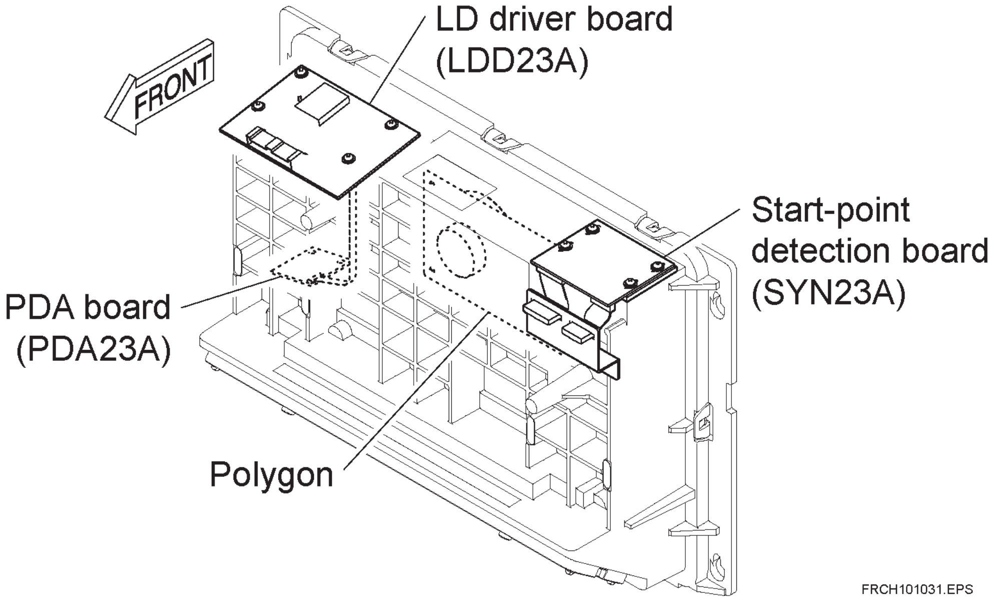
1.6.3 Erasure Unit


INV23A board
INV23A board
ERS23A board
FRONT
FRCH101028.EPS

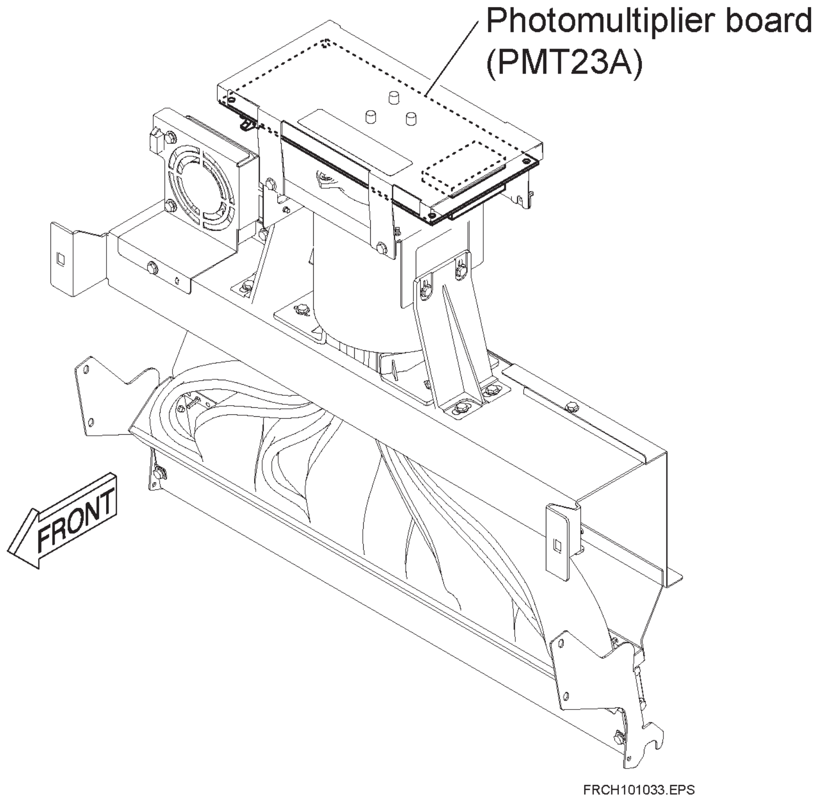
For the mounting position of the INV23A board, which is mounted on the ERS23A board, and the locations of the erasure lamps controlled by the INV23A board, see "3.2.3 Erasure Lamp and Board Configurations."

☞ **{MD:3.2.3_Erasure Lamp and Board Configurations}**

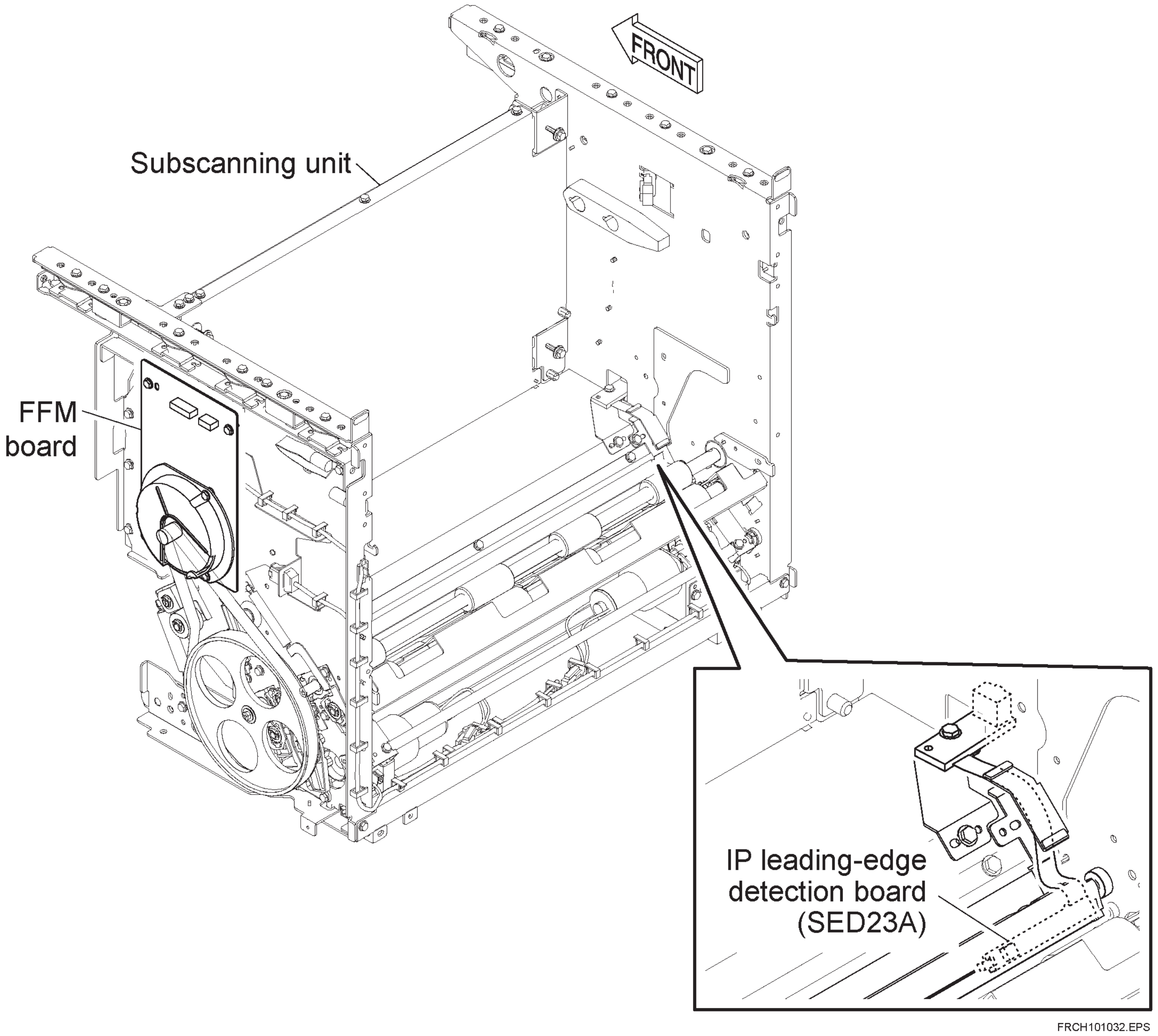
1.6.4 Scanning Optics Unit


FRONT
LD driver board
(LDD23A)
Start-point
detection board
(SYN23A)
PDA board
(PDA23A)
Polygon
FRCH101031.EPS

1.6.5 Light-Collecting Unit

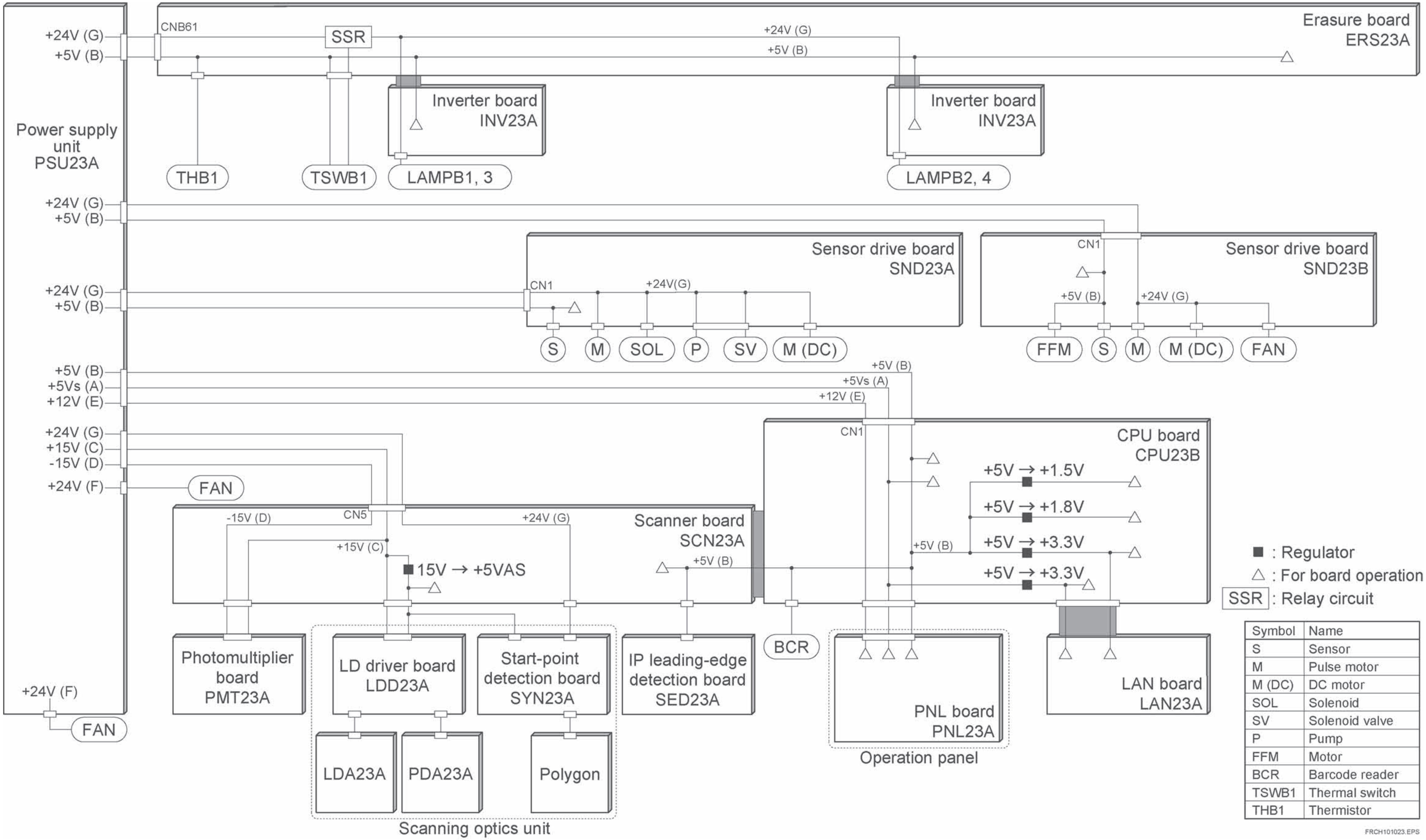

Photomultiplier board
(PMT23A)
FRONT
FRCH101033.EPS

1.6.6 Subscanning Unit


FRONT
Subscanning unit
FFM
board
IP leading-edge
detection board
(SED23A)
FRCH101032.EPS

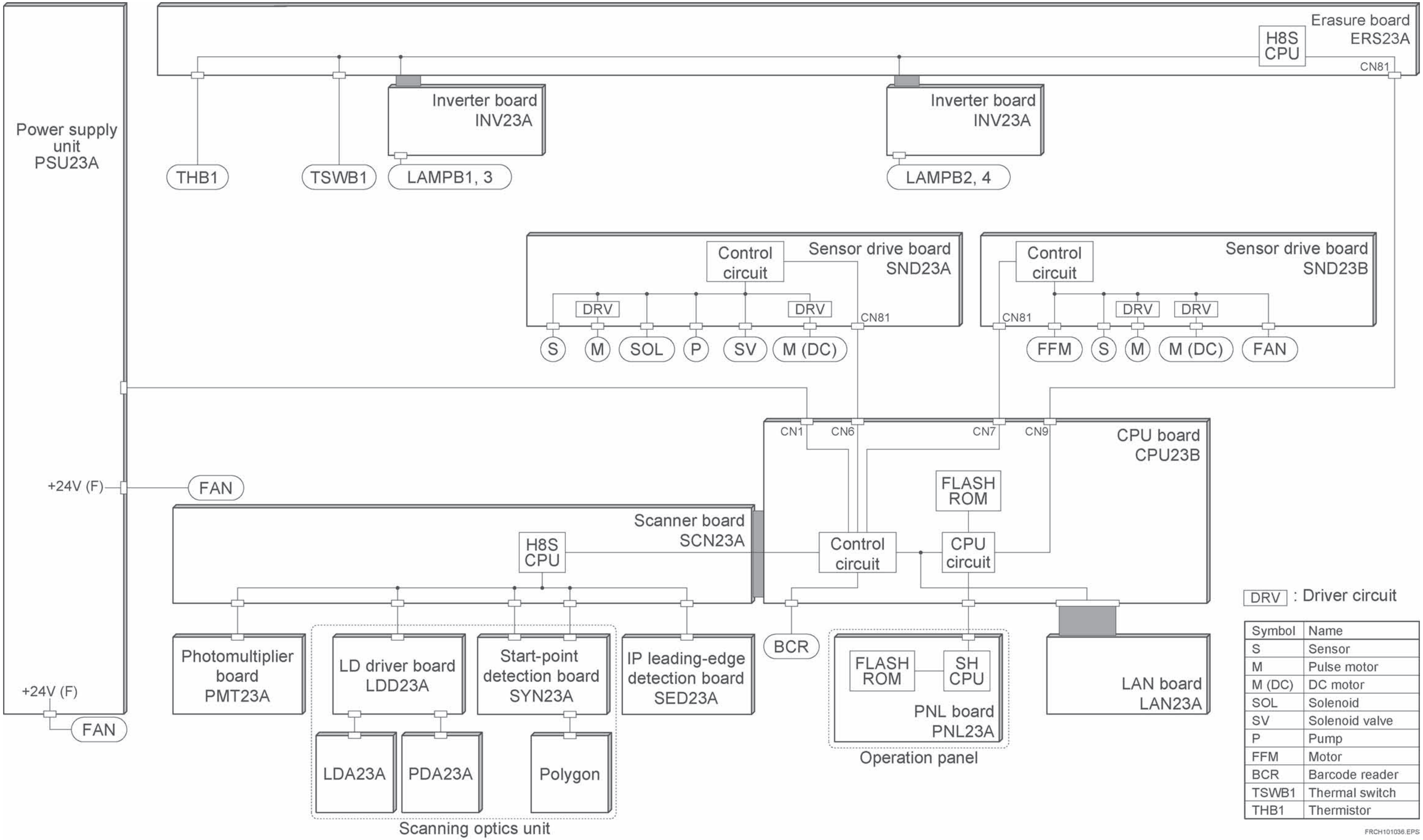
1.7 System Block Diagram

■ Power Supply System


Power supply unit PSU23A
+24V (G)
+5V (B)
CNB61
SSR
Erasure board ERS23A
Inverter board INV23A
Inverter board INV23A
THB1
TSWB1
LAMPB1, 3
LAMPB2, 4
Sensor drive board SND23A
CN1
+24V(G)
S
M
SOL
P
SV
M (DC)
Sensor drive board SND23B
+5V (B)
+24V (G)
FFM
S
M
M (DC)
FAN
+5V (B)
+5Vs (A)
+12V (E)
+24V (G)
+15V (C)
-15V (D)
+24V (F)
FAN
CPU board CPU23B
+5V → +1.5V
+5V → +1.8V
+5V → +3.3V
+5V → +3.3V
Scanner board SCN23A
CN5
-15V (D)
+15V (C)
+24V (G)
15V → +5VAS
+5V (B)
Photomultiplier board PMT23A
LD driver board LDD23A
Start-point detection board SYN23A
IP leading-edge detection board SED23A
BCR
PNL board PNL23A
Operation panel
LAN board LAN23A
LDA23A
PDA23A
Polygon
Scanning optics unit
+24V (F)
FAN
■ : Regulator
△ : For board operation
SSR : Relay circuit
FRCH101023.EPS

Symbol	Name
S	Sensor
M	Pulse motor
M (DC)	DC motor
SOL	Solenoid
SV	Solenoid valve
P	Pump
FFM	Motor
BCR	Barcode reader
TSWB1	Thermal switch
THB1	Thermistor

■ Signal System


Power supply unit PSU23A
Erasure board ERS23A
H8S CPU
CN81
Inverter board INV23A
Inverter board INV23A
THB1
TSWB1
LAMPB1, 3
LAMPB2, 4
Sensor drive board SND23A
Control circuit
DRV
DRV
CN81
S
M
SOL
P
SV
M (DC)
Sensor drive board SND23B
Control circuit
CN81
DRV
DRV
FFM
S
M
M (DC)
FAN
CN1
CN6
CN7
CN9
CPU board CPU23B
FLASH ROM
Control circuit
CPU circuit
+24V (F)
FAN
Scanner board SCN23A
H8S CPU
BCR
LAN board LAN23A
Photomultiplier board PMT23A
LD driver board LDD23A
Start-point detection board SYN23A
IP leading-edge detection board SED23A
FLASH ROM
SH CPU
PNL board PNL23A
Operation panel
+24V (F)
FAN
LDA23A
PDA23A
Polygon
Scanning optics unit
DRV : Driver circuit
FRCH101036.EPS

Symbol	Name
S	Sensor
M	Pulse motor
M (DC)	DC motor
SOL	Solenoid
SV	Solenoid valve
P	Pump
FFM	Motor
BCR	Barcode reader
TSWB1	Thermal switch
THB1	Thermistor

Control Sheet

Issue date	Revision number	Reason	Pages affected
08.15.2005	00	New release (FM4683)	All pages
11.10.2005	01	Corrections (FM4750)	All pages

CR-IR 357 Service Manual

Troubleshooting (MT)

2. Error Code Table

Error Code	Error Name	Occurrence Condition	Analysis Flow
10001	**File open error (1)**	During bootup, when the file is loaded from the FLASH ROM on the CPU23B board into the DRAM, error is detected for the file residing in the FLASH ROM. Alternatively, an error is detected for the file residing in the DRAM.	☞ {MT:18.}
10002	**File read error (1)**	During bootup, when the file is loaded from the FLASH ROM on the CPU23B board into the DRAM, error is detected for the file residing in the FLASH ROM. Alternatively, an error is detected for the file residing in the DRAM.	☞ {MT:18.}
10003	**File format error (1)**	During bootup, when the file is loaded from the FLASH ROM on the CPU23B board into the DRAM, error is detected for the file residing in the FLASH ROM. Alternatively, an error is detected for the file residing in the DRAM.	☞ {MT:18.}
10004	**File write error (1)**	During bootup, when the file is loaded from the FLASH ROM on the CPU23B board into the DRAM, error is detected for the file residing in the FLASH ROM. Alternatively, an error is detected for the file residing in the DRAM.	☞ {MT:18.}
10005	**File close error (1)**	During bootup, when the file is loaded from the FLASH ROM on the CPU23B board into the DRAM, error is detected for the file residing in the FLASH ROM. Alternatively, an error is detected for the file residing in the DRAM.	☞ {MT:18.}
10010	**File open error (2)**	During bootup, when the file is loaded from the FLASH ROM on the CPU23B board into the DRAM, error is detected for the file residing in the FLASH ROM. Alternatively, an error is detected for the file residing in the DRAM.	☞ {MT:18.}
10011	**File read error (2)**	During bootup, when the file is loaded from the FLASH ROM on the CPU23B board into the DRAM, error is detected for the file residing in the FLASH ROM. Alternatively, an error is detected for the file residing in the DRAM.	☞ {MT:18.}
10012	**File format error (2)**	During bootup, when the file is loaded from the FLASH ROM on the CPU23B board into the DRAM, error is detected for the file residing in the FLASH ROM. Alternatively, an error is detected for the file residing in the DRAM.	☞ {MT:18.}

Error Code	Error Name	Occurrence Condition	Analysis Flow
10013	**File write error (2)**	During bootup, when the file is loaded from the FLASH ROM on the CPU23B board into the DRAM, error is detected for the file residing in the FLASH ROM. Alternatively, an error is detected for the file residing in the DRAM.	☞ {MT:18.}
10014	**File close error (2)**	During bootup, when the file is loaded from the FLASH ROM on the CPU23B board into the DRAM, error is detected for the file residing in the FLASH ROM. Alternatively, an error is detected for the file residing in the DRAM.	☞ {MT:18.}
10060	**Device open error**	A file could not be opened during bootup or routine processing due to abnormal motor or other device management information, which is stored on the CPU23B board.	☞ {MT:18.}
10061	**Device I/O control error**	Although the CPU23B board attempted during bootup or routine processing to start devices on the SCN23A and SND23A/B boards, an error was detected.	☞ {MT:18.}
10062	**Device read error**	Although the CPU23B board attempted during bootup or routine processing to read device information from the SCN23A and SND23A/B boards, an error was detected.	☞ {MT:18.}
10063	**Device write error**	Although the CPU23B board attempted during bootup or routine processing to write device information onto the SCN23A and SND23A/B boards, an error was detected.	☞ {MT:18.}
10064	**Barcode reader communication error**	The communication between the CPU23B board and barcode reader (BCR) failed during bootup or routine processing due to a communication error.	☞ {MT:18.}
10065	**SCN board BUSY timeout**	The scanner board status was checked during bootup or routine processing before command transmission from the CPU23B board to scanner board SCN23A. However, the scanner board was busy.	☞ {MT:18.}
10066	**SCN board transmission timeout**	A timeout occurred in the communication between the main CPU (CPU23B board) and scanner H8 CPU (SCN23A) during bootup or routine processing.	☞ {MT:18.}

Error Code	Error Name	Occurrence Condition	Analysis Flow
10067	**SCN board transmission maximum retry count exceeded**	The CPU23B board attempted to transmit a command to the SCN23A board during bootup or routine processing. However, the maximum retry count was exceeded (maximum retry count: 3).	☞ {MT:18.}
10071	**SCN board reception checksum error**	A checksum error occurred during bootup or routine processing when the CPU23B board attempted to receive a command from the SCN23A board.	☞ {MT:18.}
10072	**SCN board reception timeout**	A timeout occurred during bootup or routine processing when the CPU23B board attempted to receive a command from the SCN23A board.	☞ {MT:18.}
10080	**Image reduction process parameter error**	A parameter error occurred during routine processing when the CPU23B board was engaged in an image reduction process.	☞ {MT:18.}
10081	**Image reduction process error**	An error occurred during routine processing when the CPU23B board was engaged in an image reduction process.	☞ {MT:18.}
10082	**ERS board communication error**	The communication between the CPU23B board and ERS23A board failed during bootup or routine processing due to a communication error.	☞ {MT:18.}
10230	**Scanner functional error**	During bootup or during routine processing, because the connector (CN1 on the PMT23A board, CNZ31 on the scanning optics unit, CNZ32 on the scanning optics unit, CN1 on the SYN23A board, CN1 on the LDD23A board) is disconnected, the laser (LDD), start-point detection (SYN), and photomultiplier (PMT) functions are disabled. Because the laser is not enabled, the leading-edge detection (SED) cannot be performed (detail code: D0E503). Note that if the HV is OFF, the detail code is D0E403.	☞ {MT:5.1}
10231	**Scanner power supply error (1)**	During bootup or during routine processing, because +15V is not supplied to the SCN23A board due to blow of the fuse (F2 on the SCNS23A board) or +15V power supply error, most of the functions, except for the polygonal mirror (POL) and laser (LDD), are disabled (detail code: A00300). Note that if the HV is OFF, the detail code is A00000.	☞ {MT:5.2}

Error Code	Error Name	Occurrence Condition	Analysis Flow
10232	**Scanner power supply error (2)**	During bootup or during routine processing, because the fuse (F5 and F6 on the SCN23A board) is blown, the photomultiplier (PMT) and start-point detection (SYN) functions are disabled (detail code: 809500). Note that if the HV is OFF, the detail code is 808400.	☞ **{MT:5.3}**
10233	**Scanner power supply error (3)**	During bootup or during routine processing, because the fuse (F2 on the SCN23A board) is blown or because -15V is not supplied to the SCN23A board, the photomultiplier (PMT), start-point detection (SYN), and laser (LDD) functions are disabled. Because the laser (LDD) is not enabled, the leading-edge detection (SED) cannot be performed (detail code: A00300).	☞ **{MT:5.1}**
10234	**Scanner power supply error (4)**	- During bootup or during routine processing, because the fuse (F2 on the SCN23A board) is blown, ± 15V is not supplied to the SCN23A board, and the photomultiplier (PMT), start-point detection (SYN), laser (LDD), and SCN board (PLL) functions are disabled. Because the laser (LDD) is not enabled, the leadingedge detection (SED) cannot be performed (detail code: A00303). Note that if the HV is OFF, the detail code is A00003. - During bootup, all the fuses except for the fuse (F5 on the SCN23A board) are blown, ± 15V is not supplied to the SCN23A board, and the photomultiplier (PMT), start-point detection (SYN), laser (LDD), and SCN board (PLL) functions are disabled. Because the laser (LDD) is not enabled, the leading-edge C28detection (SED) cannot be performed (detail code: B00300). Note that if the HV is OFF, the detail code is B00000.	☞ **{MT:5.4}**
10235	**Scanner power supply error (5)**	- During bootup or during routine processing, because +24V is not supplied to the SCN23A board due to blow of the fuse (F4 on the SCN23A board) or +24V (SLOT-E) power supply error, the polygonal mirror (POL) function is disabled (detail code: 902403). Note that if the HV is OFF, the detail code is 903403. - During bootup or during routine processing, because +5V is not supplied to the SYN23A board and SED23A board due to blow of the fuse (F3 or F6 on the SCN23A board) or +5V (SLOT-B) power supply error, the leading-edge detection (SED) and start-point detection (SYN) functions are disabled (detail code: C01400).	☞ **{MT:5.5}**

Error Code	Error Name	Occurrence Condition	Analysis Flow
10236	**Scanner power supply error (6)**	During bootup or during routine processing, because ± 15V is not supplied to the SYN23A board, PMT23A board, and LDD23A board due to blow of the fuses (F2 and F5 on the SCN23A board), the photomultiplier (PMT), start-point detection (SYN), and laser (LDD) functions are disabled. Because the laser (LDD) is not enabled, the leading-edge detection (SED) cannot be performed (detail code: 80D500). Note that if the HV is OFF, the detail code is 80D400.	☞ {MT:5.6}
10244	**Scanner control board error (4)**	During bootup, an SCN23A board diagnostic error associated with polygon error is detected. Because the PLL on the SCN23A board does not oscillate, a polygon sync signal cannot be detected.	☞ {MT:5.7}
10261	**Polygon rotation error (1)**	During bootup, error for the polygon lock signal (PONL, POKL) is detected so that the polygonal mirror function is disabled. The start-point detection (SYN) and leading-edge detection (SED) functions are also disabled (detail code: 903403, 003400, 902403).	☞ {MT:5.7}
10271	**Laser unlit error (1)**	During bootup, the laser (LDD) and start-point detection (SYN) functions are disabled due to blow of the fuse (F4 on the SCN23A board) or laser failure (detail code: 805413, C05413, 00503).	☞ {MT:5.8}
10281	**Start-point detection error (1)**	During routine processing or during self-diagnostics, because the signal from the start-point detection (SYN) is faulty, the SCN23A board does not operate normally (detail code: 801C03).	☞ {MT:5.9}
10283	**Scanning optics unit board error (1)**	For self-diagnostics prior to reading during routine processing, the SCN23A board diagnostic error associated with polygon error is detected. The laser is unlit due to a disconnected connector at the scanning optics unit, etc., so that an error related to the polygon error occurs, as well.	☞ {MT:5.7}
10294	**H8 CPU version error**	It was detected during bootup that the version of the firmware for the H8 CPU on the SCN23A board was not as specified.	☞ {MT:5.10}
10298	**Scanner retry error**	During bootup, because the scanner-related error is detected, the IP is returned to the cassette and the scanner is initialized. The routine processing is retried again, but the scanner-related error recurs.	☞ {MT:5.11}

Error Code	Error Name	Occurrence Condition	Analysis Flow
10311	**Cassette hold sensor combination inconsistency**	The cassette width sensors detected an abnormal combination when the cassette set unit performed a cassette hold operation during bootup. The cassette IN sensor (SA1) detected that no cassette was present (OPEN). The cassette hold sensor (SA2) detected a cassette hold (CLOSED). The cassette ejection sensor (SA11) detected that no cassette was present (OPEN).	☞ {MT:4.9}
10312	**Cassette sensor combination inconsistency (1)**	The cassette width sensors in the cassette set unit detected an abnormal combination during bootup. The cassette IN sensor (SA1) detected a cassette (CLOSED). The cassette hold sensor (SA2) detected that a cassette hold was released (OPEN). The cassette ejection sensor (SA11) detected that no cassette was present (OPEN).	☞ {MT:4.10}
10313	**Cassette sensor combination inconsistency (2)**	The cassette width sensors in the cassette set unit detected an abnormal combination during bootup. The cassette IN sensor (SA1) detected a cassette (CLOSED). The cassette hold sensor (SA2) detected a cassette hold (CLOSED). The cassette ejection sensor (SA11) detected that no cassette was present (OPEN).	☞ {MT:4.10}
10314	**Cassette sensor combination inconsistency (3)**	The cassette width sensors in the cassette set unit detected an abnormal combination during bootup. The cassette insertion error sensor (SA14) detected a cassette (CLOSED). The large cassette size sensor (SA15) detected that no cassette was present (OPEN). When a small-size cassette is inserted into position under normal conditions, the SA14 and SA15 both OPEN. When a large-size cassette is inserted into position under normal conditions, the SA14 and SA15 both CLOSE.	☞ {MT:4.11}
10317	**Side-positioning grip sensor combination inconsistency (SC1 & SC2)**	When a home positioning operation was performed for the side-positioning grip during bootup or routine processing, the side-positioning grip HP sensor (SC1) and side-positioning grip release position sensor (SC2) detected an abnormal state.	☞ {MT:4.20}

Error Code	Error Name	Occurrence Condition	Analysis Flow
10318	**Side-positioning grip HP error**	When a home positioning operation was performed for the side-positioning grip during bootup or routine processing, the side-positioning conveyor roller grip release motor (MC2) was driven. However, the side-positioning grip HP sensor (SC1) did not OPEN within a predetermined period of time. Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.20}
10319	**Side-positioning start position detection error**	When an operation was performed to detect a side-positioning start position during bootup or routine processing, the side-positioning latch mechanism driving motor (MC3) was driven. However, the side-positioning latch stroke sensor (SC10) did not CLOSE within a predetermined period of time. Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.21}
10320	**Side-positioning home positioning error**	When a home positioning operation was performed for the side-positioning mechanism during bootup or routine processing, the side-positioning latch mechanism driving motor (MC3) was driven. However, the side-positioning latch stroke sensor (SC10) did not OPEN within a predetermined period of time. Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.21}
10322	**Subscanning grip position search error**	When an operation was performed to search the subscanning grip position during bootup, the driving-side grip roller release HP sensor (SZ3) or driven-side grip roller release HP sensor (SZ2) was not CLOSED. Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.26}
10323	**Driving-side grip roller grip error**	When an operation was performed to grip the driving-side grip roller during bootup, the driving-side grip roller release HP sensor (SZ3) was not OPEN. Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.26}
10324	**Driven-side grip roller grip error (1)**	When a fast grip operation was performed for the driven-side grip roller during bootup, the driven-side grip roller release HP sensor (SZ2) was not OPEN. Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.26}
10325	**Cassette cover closing mechanism HP release error**	When a home position release operation was performed for the cassette cover closing mechanism during bootup or routine processing, the cassette cover closing mechanism driving motor (MA2) was driven. However, the cassette cover closing mechanism HP sensor (SA8) did not OPEN within a predetermined period of time. Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.12}

Error Code	Error Name	Occurrence Condition	Analysis Flow
10326	**Cassette cover closing mechanism home positioning error**	When an attempt was made to return the cassette cover closing mechanism to its home position during bootup or routine processing, the cassette cover closing mechanism driving motor (MA2) was driven. However, the cassette cover closing mechanism HP sensor (SA8) did not CLOSE within a predetermined period of time. Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.12}
10327	**Debris fall prevention shutter close error during bootup**	When a home positioning operation was performed for the cassette cover opening mechanism during bootup, it was found that the debris fall prevention shutter sensor (SA3) was CLOSED (the shutter was closed).	☞ {MT:4.13}
10328	**IP hold release error during bootup**	When a home positioning operation was performed for the cassette cover opening mechanism during bootup, it was found that the cassette IP holding sensor (SA10) was OPEN (the IP was held and a new cassette was detected).	☞ {MT:4.14}
10329	**Cassette cover opening mechanism HP detection error (1)**	When a home positioning operation was performed for the cassette cover opening mechanism during bootup or routine processing, the cassette cover opening mechanism driving motor (MA1) was driven by one pulse. However, the cassette cover opening mechanism HP sensor (SA7) did not CLOSE within a predetermined period of time. Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.15}
10332	**Debris fall prevention shutter open error (1)**	When a home positioning operation was performed for the cassette cover opening mechanism during bootup or routine processing, the cassette cover opening mechanism driving motor (MA1) was driven (to perform an approaching operation). However, the debris fall prevention shutter sensor (SA3) detected that the shutter was open.	☞ {MT:4.13}
10333	**Debris fall prevention shutter open error (2)**	When a home positioning operation was performed for the cassette cover opening mechanism during bootup or routine processing, the cassette cover opening mechanism driving motor (MA1) was driven (to perform a returning operation). However, the debris fall prevention shutter sensor (SA3) detected that the shutter was open.	☞ {MT:4.13}
10334	**Debris fall prevention shutter open error (3)**	When a home positioning operation was performed for the cassette cover opening mechanism during bootup or routine processing, the cassette cover opening mechanism driving motor (MA1) was driven by one pulse. However, the debris fall prevention shutter sensor (SA3) detected that the shutter was open.	☞ {MT:4.13}

Error Code	Error Name	Occurrence Condition	Analysis Flow
10336	**Suction arm home positioning error**	When a suction arm home positioning operation was performed during bootup or routine processing, the suction arm driving motor (MA3) was driven. However, it was impossible to detect that the suction arm HP sensor (SA6) was OPEN or CLOSED. Although two retries were performed, the sensor status was not detected, and the system went down.	☞ {MT:4.16}
10339	**Cassette size sensor combination error (1)**	When a remaining IP search process was performed during bootup, the cassette width sensors (SA9, SA14, and SA15) in the cassette set unit detected an abnormal combination.	☞ {MT:4.11}
10340	**Cassette size sensor combination error (2)**	When a remaining IP search process was performed during bootup, the cassette IN sensor and cassette ejection sensor in the cassette set unit detected an abnormal combination. The cassette ejection sensor (SA11) detected that no cassette was present (OPEN). However, the cassette IN sensor (SA1) detected a cassette (CLOSED).	☞ {MT:4.10}
10343	**IP drop detection during bootup**	When a remaining IP search process was performed during bootup, the IP dropping sensor (SA4) detected an IP (CLOSED) to find that an IP was dropped.	☞ {MT:4.17}
10344	**IP holding arm release error during bootup (1)**	When an attempt was made to release the cassette IP holding arm from the IP holding position during bootup, the cassette IP holding sensor (SA10) was OPEN (the IP was held and a new cassette was detected). Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.14}
10345	**IP holding arm release error during bootup (2)**	When an attempt was made to release the cassette IP holding arm from the IP holding position during bootup while the cassette cover opening mechanism was in the cassette cover open position, the cassette IP holding sensor (SA10) was OPEN (the IP was held and a new cassette was detected). Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.15}
10346	**Feed IP drop detection during bootup (1)**	When an IP feed operation was performed for a remaining IP search process during bootup, the IP dropping sensor (SA4) detected an IP (CLOSED) to find that an IP was dropped.	☞ {MT:4.17}

Error Code	Error Name	Occurrence Condition	Analysis Flow
10347	**IP sensor combination error**	When a remaining IP search process was performed during bootup, the IP dropping sensor (SA4) and side-positioning conveyor unit IP sensor 1 (SC3) were CLOSED (detected an IP). Therefore, the system went down.	☞ {MT:4.1}
10348	**Remaining IP conveyance error (side-positioning conveyor unit)**	When a remaining IP search process was performed during bootup, the IP transport motors (MZ1, MA4, and MC1) were driven. However, the IP dropping sensor (SA4) in the cassette set unit, IP sensor 1 (SC3) in the side-positioning conveyor unit, or IP sensor 2 (SG1) in the housing unit did not CLOSE within a predetermined period of time (did not detect an IP). It is conceivable that the IP may be jammed in the side-positioning conveyor unit.	☞ {MT:4.2}
10349	**Remaining IP conveyance error (subscanning unit)**	When a remaining IP search process was performed during bootup, the IP transport motors (MZ1, MA4, and MC1) were driven. However, the IP dropping sensor (SA4) in the cassette set unit, IP sensor 1 (SC3) in the side-positioning conveyor unit, or IP sensor 2 (SG1) in the housing unit did not CLOSE within a predetermined period of time (did not detect an IP). It is conceivable that the IP may be jammed in the subscanning unit.	☞ {MT:4.2}
10350	**Subscanning grip roller free rotation error**	When the subscanning unit grip roller freely rotated during bootup, the driving-side grip roller release HP sensor (SZ3) was not OPEN. Therefore, retries were performed. However, the maximum retry count was exceeded.	☞ {MT:4.26}
10351	**Driving-side grip roller fast grip release retry error (1)**	When a fast grip release operation was performed for the driving-side grip roller during bootup, the driving-side grip roller release HP sensor (SZ3) was not OPEN. Therefore, retries were performed. However, the maximum retry count was exceeded.	☞ {MT:4.26}
10352	**Subscanning IP ejection grip maximum retry count exceeded**	When a subscanning IP ejection grip operation was performed during bootup or routine processing, the driving-side grip roller release HP sensor (SZ3) was not CLOSED. Therefore, retries were performed. However, the maximum retry count was exceeded.	☞ {MT:4.26}

Error Code	Error Name	Occurrence Condition	Analysis Flow
10353	**Remaining IP length measurement conveyance error (1)**	When a remaining IP length measurement process was performed during bootup, the IP transport motors (MZ1, MA4, and MC1) were driven. However, IP sensor 1 (SC3) in the side-positioning conveyor unit did not CLOSE (did not detect an IP) within a predetermined period of time.	☞ {MT:4.3}
10354	**Remaining IP length measurement conveyance error (2)**	When a remaining IP length measurement process was performed during bootup, the IP transport motors (MZ1, MA4, and MC1) were driven. However, IP sensor 1 (SC3) in the side-positioning conveyor unit did not OPEN (did not find that no IP was present) within a predetermined period of time.	☞ {MT:4.3}
10355	**Remaining IP length measurement conveyance error (3)**	When a remaining IP length measurement process was performed during bootup, the IP transport motors (MZ1, MA4, and MC1) were driven. However, IP sensor 1 (SC3) in the side-positioning conveyor unit did not OPEN (did not find that no IP was present) within a predetermined period of time.	☞ {MT:4.3}
10356	**Nonstandard IP detection**	When a remaining IP length measurement process was performed during bootup, a nonstandard IP size was detected.	☞ {MT:4.22}
10357	**Subscanning pre-reading grip retry error (1)**	When the subscanning unit performed a pre-reading grip release operation during bootup or routine processing, the driven-side grip roller release HP sensor (SZ2) was not CLOSED. Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.26}
10358	**Remaining IP side-positioning error (1)**	When a remaining IP side-positioning process was performed during bootup, the IP transport motors (MA4 and MC1) were driven. However, IP sensor 1 (SC3) in the side-positioning conveyor unit did not CLOSE (did not detect an IP) within a predetermined period of time.	☞ {MT:4.4}
10360	**Feed IP drop detection during bootup (2)**	When an IP feed operation was performed within the cassette for a remaining IP ejection process during bootup, the IP dropping sensor (SA4) detected an IP (CLOSED) to find that an IP was dropped.	☞ {MT:4.17}
10361	**Cassette cover opening mechanism home positioning error**	When a home positioning operation was performed for the cassette cover opening mechanism during bootup or routine processing, the cassette cover opening mechanism driving motor (MA1) was driven. However, it was impossible to detect that the cassette cover opening mechanism HP sensor (SA7) was OPEN or CLOSED. Although two retries were performed, the sensor status was not detected, and the system went down.	☞ {MT:4.15}

Error Code	Error Name	Occurrence Condition	Analysis Flow
10364	**Remaining IP load conveyance error during bootup (1)**	When a remaining IP ejection process was performed during bootup, the IP transport motors (MA4 and MC1) were driven. However, IP sensor 2 (SG1) in the housing unit did not CLOSE (did not detect an IP) within a predetermined period of time.	☞ {MT:4.5}
10365	**Remaining IP load conveyance error during bootup (2)**	When a remaining IP ejection process was performed during bootup, the IP transport motors (MA4 and MC1) were driven. However, IP sensor 2 (SG1) in the housing unit did not OPEN (did not find that no IP was present) within a predetermined period of time.	☞ {MT:4.5}
10367	**Subscanning speed correction retry error**	When a subscanning grip speed correction operation was performed during bootup or routine processing, an error occurred. Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.26}
10370	**Dust removal mechanism home positioning retry error**	The dust removal motor (MZ3) was driven during bootup or routine processing to perform a home positioning operation for the dust removal mechanism. However, the dust removal HP sensor (SZ5) did not OPEN within a predetermined period of time. Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.27}
10371	**Dust removal mechanism drive retry error (1)**	The dust removal motor (MZ3) was driven by the dust removal mechanism during user utility processing. However, the dust removal HP sensor (SZ5) did not CLOSE within a predetermined period of time. Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.27}
10372	**Dust removal mechanism drive retry error (2)**	The dust removal motor (MZ3) was driven by the dust removal mechanism during user utility processing. However, the dust removal HP sensor (SZ5) did not OPEN within a predetermined period of time. Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.27}
10380	**Cassette cover opening mechanism error**	The cassette cover opening mechanism driving motor (MA1) was driven to close the debris fall prevention shutter during routine processing. However, the cassette cover opening mechanism HP sensor (SA7) was CLOSED.	☞ {MT:4.15}

Error Code	Error Name	Occurrence Condition	Analysis Flow
10391	**IP holding arm release error (1)**	The cassette cover opening mechanism driving motor (MA1) was driven during routine processing to release the cassette IP holding arm from the IP holding position after IP suction. However, it was found that the cassette IP holding sensor (SA10) was OPEN (the IP was held and a new cassette was detected).	☞ {MT:4.14}
10393	**Feed IP holding error**	The cassette cover opening mechanism driving motor (MA1) for IP holding was driven during routine processing. However, it was found that the cassette IP holding sensor (SA10) was OPEN (the IP was held and a new cassette was detected). Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.14}
10395	**Pre-length-measurement IP position detection error (2)**	The IP transport motor (MA4) was driven during routine processing to return an IP to the cassette after an IP drop. However, IP sensor 2 (SG1) in the housing unit did not OPEN (did not find that no IP was present) within a predetermined period of time.	☞ {MT:4.6}
10404	**BCR read retry conveyance error**	When an IP return conveyance operation was performed during routine processing for the purpose of retrying to read a barcode, the IP transport motors (MA4 and MC1) were driven. However, the IP dropping sensor (SA4) did not CLOSE (did not detect an IP) within a predetermined period of time.	☞ {MT:4.7}
10408	**Side-positioning grip release error**	The side-positioning conveyor roller grip release motor (MC2) was driven to release the side-positioning grip during bootup or routine processing. However, the side-positioning grip release position sensor (SC2) did not OPEN within a predetermined period of time. Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.20}
10409	**Side-positioning grip release preparation error**	The side-positioning conveyor roller grip release motor (MC2) was driven for the purpose of retrying to release the side-positioning grip during bootup or routine processing. However, the side-positioning grip HP sensor (SC1) did not OPEN within a predetermined period of time.	☞ {MT:4.20}
10410	**Side-positioning grip error**	The side-positioning conveyor roller grip release motor (MC2) was driven for side-positioning gripping purpose during bootup or routine processing. However, the side-positioning grip HP sensor (SC1) did not OPEN within a predetermined period of time. Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.20}

Error Code	Error Name	Occurrence Condition	Analysis Flow
10411	**Side-positioning grip preparation error**	The side-positioning conveyor roller grip release motor (MC2) was driven to retry a side-positioning gripping operation during bootup or routine processing. However, the side-positioning grip release position sensor (SC2) did not OPEN within a predetermined period of time.	☞ {MT:4.20}
10418	**Driving-side grip roller grip release error**	The driven/driving grip roller driving motor (MZ2) was driven during routine processing to release the driving-side grip roller grip. However, the driving-side grip roller release HP sensor (SZ3) was not OPEN.	☞ {MT:4.26}
10419	**Post-reading conveyance error (1)**	The IP transport motors (MA4, MC1, and MZ1) were driven during routing processing to perform a post-IP-reading conveyance operation. However, IP sensor 2 (SG1) in the housing unit did not CLOSE (did not detect an IP) within a predetermined period of time. Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.8}
10420	**Erasure conveyance error**	The IP transport motors (MA4 and MC1) were driven during routine processing to perform an IP erasure conveyance operation. However, IP sensor 2 (SG1) in the housing unit did not OPEN (did not find that no IP was present) within a predetermined period of time.	☞ {MT:4.5}
10421	**IP suction error (after IP reading)**	For IP suction purposes, the IP suction pump (PA1) was turned ON during routine processing. However, it was found that the IP suction sensor (SA5) was CLOSED (the IP was not vacuum-retained). Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.18}
10422	**Load IP drop (1)**	After the cassette IP holding arm was released during routine processing, it was found that the IP dropping sensor (SA4) was CLOSED (due to IP detection). Therefore, retries were performed. However, the maximum retry count was exceeded.	☞ {MT:4.17}
10423	**Load IP drop (2)**	After the cassette cover was closed during routine processing, it was found that the IP dropping sensor (SA4) was CLOSED (due to IP detection). Therefore, retries were performed. However, the maximum retry count was exceeded.	☞ {MT:4.17}
10424	**IP holding error**	The cassette cover opening mechanism driving motor (MA1) was driven during routine processing to prevent an IP drop. However, it was found that the cassette IP holding sensor (SA10) was CLOSED (the IP was not held and an old cassette was detected). Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.14}

Error Code	Error Name	Occurrence Condition	Analysis Flow
10425	**IP suction positioning preliminary conveyance error**	When a suction positioning preliminary conveyance operation was performed for a load IP during routine processing, the IP transport motor (MA4) was driven. However, IP sensor 2 (SG1) in the housing unit did not CLOSE (did not detect an IP) within a predetermined period of time.	☞ {MT:4.6}
10426	**IP suction positioning conveyance error**	When a suction positioning conveyance operation was performed for a load IP during routine processing, the IP transport motor (MA4) was driven. However, IP sensor 2 (SG1) in the housing unit did not OPEN (did not find that no IP was present) within a predetermined period of time.	☞ {MT:4.6}
10427	**Debris fall prevention shutter open error**	The cassette cover opening mechanism driving motor (MA1) was driven during routine processing to release a held IP in the load sequence. However, it was found that the debris fall prevention shutter sensor (SA3) was OPEN (the shutter was open).	☞ {MT:4.13}
10428	**IP hold release error (1)**	The cassette cover opening mechanism driving motor (MA1) was driven during routine processing to release a held IP in the load sequence. However, it was found that the cassette IP holding sensor (SA10) was OPEN (the IP was held and a new cassette was detected). Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.14}
10429	**IP hold release error (2)**	The cassette cover opening mechanism driving motor (MA1) was driven during routine processing to release a held IP in the load sequence. However, it was found that the cassette IP holding sensor (SA10) was OPEN (the IP was held and a new cassette was detected). Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.14}
10430	**Cassette cover opening mechanism home positioning error**	The cassette cover opening mechanism driving motor (MA1) was driven during routine processing to achieve cassette cover opening mechanism home positioning. However, it was found that the debris fall prevention shutter sensor (SA3) was CLOSED (the shutter was closed). Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.13}
10432	**IP suction relief error**	When a suction relief operation was performed in the IP load sequence during routine processing, it was found that the IP suction sensor (SA5) was OPEN (the IP was vacuum-retained). Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.18}

Error Code	Error Name	Occurrence Condition	Analysis Flow
10433	**IP drop after cassette cover opening (1)**	After the cassette cover opening mechanism driving motor (MA1) was driven during routine processing to retract the cassette cover opening pin, it was found that the IP dropping sensor (SA4) was CLOSED (due to IP detection).	☞ {MT:4.17}
10434	**IP drop after cassette cover opening (2)**	After a held IP was released in the load sequence during routine processing, it was found that the IP dropping sensor (SA4) was CLOSED (due to IP detection).	☞ {MT:4.17}
10435	**IP conveyance error**	The IP transport motors (MA4, MC1, and MZ1) were driven during bootup or routine processing. However, IP sensor 2 (SG1) in the housing unit did not OPEN (did not find that no IP was present) within a predetermined period of time. It is conceivable that the IP may be jammed between the erasure unit and side-positioning conveyor unit.	☞ {MT:4.8}
10436	**Cassette cover closing mechanism drive error**	The cassette cover closing mechanism driving motor (MA2) was driven during routine processing. However, the cassette cover closing mechanism HP sensor (SA8) did not CLOSE within a predetermined period of time. Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.12}
10441	**Debris fall prevention shutter open error (4)**	The cassette cover opening mechanism driving motor (MA1) was driven by one pulse during bootup or routine processing to perform a home positioning operation for the cassette cover opening mechanism. However, it was found that the debris fall prevention shutter sensor (SA3) was OPEN (the shutter was open).	☞ {MT:4.13}
10443	**Bootup cassette cover opening mechanism home positioning error**	When the cassette cover opening mechanism was moved from the reference position to the home position during bootup, it was found that the IP dropping sensor (SA4) was CLOSED (due to IP detection). Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.17}
10451	**Remaining IP side-positioning error (2)**	When a remaining IP side-positioning process was performed during bootup, the IP transport motors (MA4, MC1, and MZ1) were driven to achieve IP positioning. However, IP sensor 2 (SG1) in the housing unit was CLOSED.	☞ {MT:4.8}

Error Code	Error Name	Occurrence Condition	Analysis Flow
10456	**Cassette cover closing mechanism HP sensor error**	When an attempt was made during bootup or routine processing to place the cassette cover closing mechanism in its reference position, the cassette cover CLOSE position sensor (SA12) was not OPEN.	☞ {MT:4.12}
10461	**Feed conveyance retry error**	The IP transport motors (MA4 and MC1) were driven during routine processing to perform an IP return conveyance operation in the feed conveyance retry sequence. However, IP sensor 2 (SG1) in the housing unit did not OPEN within a predetermined period of time.	☞ {MT:4.5}
10462	**Post-reading conveyance error (2)**	The IP transport motors (MA4, MC1, and MZ1) were driven during routing processing to perform a post-IP-reading conveyance operation. However, IP sensor 1 (SC3) in the side-positioning conveyor unit did not CLOSE (did not detect an IP) within a predetermined period of time.	☞ {MT:4.3}
10464	**Side-positioning reference block home positioning retry error**	The side-positioning reference block driving motor (MC4) was driven during bootup or routine processing to perform a home positioning operation for the side-positioning reference block. However, the side-positioning reference block HP sensor (SC7) did not CLOSE within a predetermined period of time. Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.23}
10465	**Remaining IP side-positioning reference surface positioning error**	The side-positioning reference block driving motor (MC4) was driven during bootup to perform a remaining IP side-positioning process. However, the side-positioning reference block HP sensor (SC7) did not CLOSE within a predetermined period of time.	☞ {MT:4.23}
10467	**Side-positioning latch home positioning error**	The side-positioning latch mechanism driving motor (MC3) was driven during bootup or routine processing to perform a home positioning operation for the side-positioning latch. However, the side-positioning latch position sensor (SC8) did not OPEN within a predetermined period of time. Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.24}
10468	**Side-positioning latch HP detection error**	The side-positioning latch mechanism driving motor (MC3) was driven during bootup or routine processing to detect the home position of the side-positioning latch. However, the side-positioning latch position sensor (SC8) did not OPEN within a predetermined period of time. Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.24}

Error Code	Error Name	Occurrence Condition	Analysis Flow
10469	**Side-positioning latch protrusion error**	The side-positioning latch mechanism driving motor (MC3) was driven during bootup or routine processing to protrude the side-positioning latch. However, the side-positioning latch position sensor (SC8) did not OPEN within a predetermined period of time. Although retries were performed, the maximum retry count was exceeded.	☞ **{MT:4.24}**
10731	**INV23A board position error**	When the ERS board conducted a diagnostic check during bootup, it was found that the INV23A board was not mounted in the correct position. For the correct board position, refer to the MD volume.	☞ **{MT:21.7}**
10900	**Configuration initialization failure**	During bootup, the Iconfiguration data (Irset.cfg) could not be loaded into the SDRAM from the flash ROM on the CPU23A board.	☞ **{MT:18.}**
11200	**Initialization HV-OFF status**	It was found during bootup that the high voltage of the photomultiplier (PMT23A board) was OFF.	☞ **{MT:13.}**
11273	**Laser life warning**	During bootup, the laser drive current value (LDIF) is more than 1.4 times the factory default value.	☞ **{MT:5.10}**
11287	**Image data variation or image signal connector error during bootup**	An abnormal virtual data change was detected when the virtual data transfer diagnostics was conducted for bootup. In the virtual data transfer diagnostics for bootup, an abnormal virtual data change, disconnected image signal connector, or erroneous connector connection was detected.	☞ **{MT:5.12}**
11315	**Bootup improper cassette loading detection**	It was found during bootup that a cassette was improperly loaded (inserted obliquely or into a non-reference position).	☞ **{MT:4.19}**
11316	**Bootup incomplete cassette insertion detection**	It was found during bootup that a cassette was incompletely inserted. The cassette IN sensor (SA1) detected that no cassette was present (CLOSED). The cassette ejection sensor (SA11) detected that a cassette was present (CLOSED).	☞ **{MT:4.10}**

Error Code	Error Name	Occurrence Condition	Analysis Flow
11341	**Improper cassette loading detection (1)**	When a remaining IP search process was performed during bootup, an incompletely inserted cassette was detected. The cassette IN sensor (SA1) detected that no cassette was present (CLOSED). The cassette hold sensor (SA2) detected a cassette hold (OPEN). The cassette ejection sensor (SA11) detected that a cassette was present (CLOSED).	☞ {MT:4.10}
11342	**Improper cassette loading detection (2)**	When a remaining IP search process was performed during bootup, an incompletely inserted cassette was detected. The cassette IN sensor (SA1) detected that a cassette was present (OPEN). The cassette hold sensor (SA2) detected that a cassette hold was released (CLOSED). The cassette ejection sensor (SA11) detected that a cassette was present (CLOSED).	☞ {MT:4.10}
11373	**Cassette hold retry error**	The cassette hold pin solenoid (SOLA1) turned OFF (cassette hold) during routine processing. However, the cassette hold sensor (SA2) detected that a cassette hold was released (CLOSED). Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.9}
11374	**Incomplete cassette insertion detection**	It was found during routine processing that a cassette was incompletely inserted. The cassette IN sensor (SA1) detected that no cassette was present (CLOSED). The cassette ejection sensor (SA11) detected that a cassette was present (CLOSED).	☞ {MT:4.10}
11375	**Cassette not detected**	The cassette hold pin solenoid (SOLA1) turned OFF (cassette hold) during routine processing. However, the cassette IN sensor (SA1) detected that no cassette was present (OPEN).	☞ {MT:4.9}
11377	**Cassette size sensor combination error**	The cassette width sensors (SA9, SA14, and SA15) in the cassette set unit detected an abnormal combination during routine processing.	☞ {MT:4.11}
11378	**Small-size cassette loading error**	The cassette width sensors in the cassette set unit detected an abnormal combination during routine processing. The "15x30 cassette" identifying sensor (SA9) detected that no cassette was present (OPEN). The cassette insertion error sensor (SA14) detected a cassette (CLOSED). The large cassette size sensor (SA15) detected that no cassette was present (OPEN).	☞ {MT:4.11}

Error Code	Error Name	Occurrence Condition	Analysis Flow
11379	**Cassette hold release error**	The cassette hold pin solenoid (SOLA1) turned ON (to release a cassette hold) during routine processing. However, the cassette hold sensor (SA2) detected a cassette hold (OPEN). Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.9}
11381	**Debris fall prevention shutter close error**	The cassette cover opening mechanism driving motor (MA1) was driven during routine processing to close the debris fall prevention shutter. However, it was found that the debris fall prevention shutter sensor (SA3) was OPEN (the shutter was open). Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.13}
11382	**Old cassette loading**	The cassette cover opening mechanism driving motor (MA1) was driven during routine processing to prevent an IP drop. However, it was found that the cassette IP holding sensor (SA10) was OPEN (old cassette). Although retries were performed, the maximum retry count was exceeded. It was therefore concluded that an old cassette was loaded.	☞ {MT:4.14}
11389	**IP suction error (before IP reading)**	The IP suction pump (PA1) turned ON during routine processing to perform an IP suction operation. However, it was found that the IP suction sensor (SA5) was CLOSED (the IP was not vacuum-retained). Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.18}
11390	**Feed IP suction error**	It was found during routine processing that the IP suction sensor (SA5) was CLOSED (the IP was not vacuum-retained) prior to the IP feed air leak sequence. Although an IP feed operation was retried, the maximum retry count was exceeded.	☞ {MT:4.18}
11396	**Feed IP conveyance error (1)**	The IP transport motors (MA4 and MC1) were driven during routine processing to perform a feed conveyance operation. However, IP sensor 2 (SG1) in the housing unit did not CLOSE (did not detect an IP) within a predetermined period of time. Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.5}
11397	**Feed IP conveyance error (2)**	The IP transport motors (MA4 and MC1) were driven during routine processing to perform a feed conveyance operation. However, IP sensor 1 (SC3) in the side-positioning conveyor unit did not CLOSE (did not detect an IP) within a predetermined period of time. Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.4}

Error Code	Error Name	Occurrence Condition	Analysis Flow
11398	**Nonstandard IP size**	When a remaining IP length measurement process was performed during bootup, IP sensor 1 (SC3) in the side-positioning conveyor unit and "15x30/24x30 IP width" identifying sensor (SC9) detected an abnormal combination. It was therefore concluded that a nonstandard IP size was encountered.	☞ **{MT:4.22}**
11403	**Barcode reading retry error**	The barcode could not be read during routine processing. Although the barcode reading operation was retried, the maximum retry count was exceeded.	☞ **{MT:4.25}**
11405	**Barcode reading retry conveyance error**	The IP transport motors (MA4 and MC1) were driven during routine processing to perform a barcode reading retry conveyance operation. However, IP sensor 1 (SC3) in the side-positioning conveyor unit did not CLOSE (did not detect an IP) within a predetermined period of time.	☞ **{MT:4.4}**
11406	**Nonstandard IP size**	During routine processing, the IP size detected in an IP length measurement process and the IP type detected in a barcode reading operation formed an abnormal combination.	☞ **{MT:4.25}**
11407	**Unacceptable IP generation/ type detection**	The IP type detected in a barcode reading operation during routine processing was other than ST-VN/ST-VI.	-
11413	**Leading-edge detection error**	The subscanning motor (MZ1) was driven during routine processing to perform a reading conveyance operation. However, the leading-edge detection interrupt did not occur within a predetermined period of time.	☞ **{MT:4.28}**
11414	**Subscanning conveyance error (1)**	The subscanning motor (MZ1) was driven during routine processing to perform a reading conveyance operation. However, IP sensor 1 (SC3) in the side-positioning conveyor unit did not OPEN (did not find that no IP was present) within a predetermined period of time.	☞ **{MT:4.29}**
11453	**Improperly sized cassette ejection request**	When a remaining IP ejection process was performed during bootup, it was found that the cassette size did not match the size of the IP in the machine. It was therefore requested that the cassette be ejected.	☞ **{MT:4.11}**
11454	**Empty cassette ejection request**	When a remaining IP ejection process was performed during bootup, an empty cassette was detected. It was therefore requested that the cassette be ejected.	☞ **{MT:4.10}**

Error Code	Error Name	Occurrence Condition	Analysis Flow
11460	**Old cassette loading during bootup**	The cassette IP holding arm performed an IP holding operation during bootup to determine whether the cassette was old or new. However, it was found that the cassette IP holding sensor (SA10) was CLOSED (the IP was not held and an old cassette was detected). Although retries were performed, the maximum retry count was exceeded. It was therefore concluded that an old cassette was encountered.	☞ {MT:4.14}
11465	**Side-positioning reference block reference surface positioning retry error**	The side-positioning reference block driving motor (MC4) was driven during bootup or routine processing to perform a reference surface positioning operation for the side-positioning reference block. However, the side-positioning reference block HP sensor (SC7) did not CLOSE within a predetermined period of time. Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.23}
11466	**Side-positioning reference block return retry error**	The side-positioning reference block driving motor (MC4) was driven during bootup or routine processing to return the side-positioning reference block. However, the side-positioning reference block HP sensor (SC7) did not OPEN within a predetermined period of time. Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.23}
11489	**Scanner unit cooling fan (FANG1) failure**	It was found during bootup or routine processing that the scanner unit cooling fan (FANG1) in the housing unit was faulty.	☞ {MT:6.1}
11495	**Unread IP ejection during bootup**	When a remaining IP search process was performed during bootup, an unread IP in the machine was returned to a cassette and then the cassette was ejected.	-
11498	**Request for an empty cassette having a specified size**	When a remaining IP ejection process was performed during bootup, the insertion of an empty cassette having a specified size was requested.	-
11499	**Unread IP ejection during bootup**	When a remaining IP search process was performed during bootup, an unread IP in the machine was returned to a cassette and then the cassette was ejected.	-

Error Code	Error Name	Occurrence Condition	Analysis Flow
11510	**Unread IP ejection (1)**	<Improper servicing> In the CR-IR355RU, the employed RU/console connection setting was N-N. Therefore, the cassette was ejected with a message displayed. Change the console configuration setting to 1:1. <Occurrence condition analysis> The console conducted a barcode search during routine processing. However, the relevant information was not found. Therefore, the IP was ejected into the cassette without being read.	-
11511	**Patient information not registered**	<User operation> This error occurs if no menu is selected at the time of image output. <Occurrence condition analysis> The barcode could not be read because, for instance, the patient information relevant to the barcode of the processed IP was not registered in the CL or the barcode label attached to the IP was soiled.	-
11512	**ID information acquisition error**	Although the RU sent an ID information inquiry to the CL during routine processing, the RU could not acquire ID information due to CL abnormality. (This error does not occur in a situation where the target ID is not registered or the ID information cannot be acquired due to a barcode error.) The processed IP returns to the cassette, the cassette is ejected, and the panel displays a message.	☞ {MT:14.}
11530	**Image data retransmission**	The RU has retransmitted the image data to the CL	-
11531	**Retransmission retry failure**	During routine processing, an attempt is made to retransmit the unsent image data from the RU to the CL after communication with the CL is suspended; however, the CL rejects it, so that the image data is lost and the cassette is ejected.	☞ {MT:14.}
11700	**Erasure degeneration resulting from inadequate erasure due to erasure lamp illumination failure**	A predetermined number of erasure lamps failed to illuminate. The erasure degeneration mode then prevailed due to inadequate erasure. An unerased IP was ejected into the cassette. The message appeared and the user made a mode selection. For the number of unlit erasure lamps, refer to the MD volume.	☞ {MT:6.3}

Error Code	Error Name	Occurrence Condition	Analysis Flow
11701	**Erasure time extension due to erasure lamp illumination failure**	Some erasure lamps failed to illuminate. Therefore, the message appeared, and a process was performed in the erasure extension mode in which the erasure time was extended. For the number of unlit erasure lamps, refer to the MD volume.	☞ {MT:6.3}
11702	**Erasure lamp life end advance notice**	A predetermined cumulative erasure lamp illumination time was exceeded. Therefore, the message appeared to indicate that the lamp life end is about to be reached. For the predetermined cumulative erasure lamp illumination time, refer to the MD volume.	☞ {MT:21.8}
11703	**Erasure lamp life end 1**	The life end warning message appeared because a predetermined cumulative erasure lamp illumination time was exceeded. For the predetermined cumulative erasure lamp illumination time, refer to the MD volume.	☞ {MT:21.8}
11704	**Erasure lamp life end 2**	The life end message appeared because a predetermined cumulative erasure lamp illumination time was exceeded. For the predetermined cumulative erasure lamp illumination time, refer to the MD volume.	☞ {MT:21.8}
11710	**Temperature sensor failure**	It was found during bootup that the temperature thermistor (THE1) was outside the specified temperature range or that the erasure unit temperature control function was inoperative due to an open-circuited or short-circuited sensor.	☞ {MT:6.4}
11720	**Erasure cooling fan (FANB1) failure**	The failure was detected by a current monitor circuit inside the erasure cooling fan (FANB1) during bootup or routine processing.	☞ {MT:6.2}
11721	**ERS23A board F3 fuse blowout**	It was found during bootup or routine processing that the F3 fuse on the ERS23A board, which protects the erasure cooling fan (FANB1), was blown.	☞ {MT:9.}
11732	**Erasure time extension due to INV board failure**	Some erasure lamps failed to illuminate due to an INV board failure. Therefore, the erasure time was extended. For the number of unlit erasure lamps, refer to the MD volume.	☞ {MT:6.3}

Error Code	Error Name	Occurrence Condition	Analysis Flow
11733	**Erasure degeneration due to INV board failure**	A predetermined number of erasure lamps failed to illuminate due to an INV board failure. The erasure degeneration mode then prevailed, and an unerased IP was ejected into the cassette. For the number of unlit erasure lamps, refer to the MD volume.	☞ {MT:6.3}
11760	**Inadequately erased IP ejection**	An IP that was inadequately erased due, for instance, to an erasure lamp illumination failure or erasure lamp temperature detection thermistor (THB1) failure was returned to the cassette, and the cassette was ejected.	☞ {MT:6.6}
11901	**Right-hand side cover air filter life end indication**	The message appeared and the error was logged because the life end of the right-hand side cover air filter was reached, that is, an IP conveyance count of 90,000 (2 years) was exceeded. Replace the air filter.	☞ {MT:21.5}
11902	**Erasure unit brush roller life end indication**	The message appeared and the error was logged because the life end of the erasure unit brush roller was reached, that is, an IP conveyance count of 90,000 (2 years) was exceeded. Replace the brush roller.	☞ {MT:21.5}
11903	**Cassette impact absorption damper life end indication**	The message appeared and the error was logged because the life end of the cassette impact absorption damper was reached, that is, an IP conveyance count of 180,000 (4 years) was exceeded. Replace the damper.	☞ {MT:21.5}
11904	**Erasure lamp filter life end indication**	The message appeared and the error was logged because the life end of the erasure lamp filter was reached, that is, an IP conveyance count of 90,000 (2 years) was exceeded. Replace the lamp filter.	☞ {MT:21.5}
11905	**IP suction pump life end**	The message appeared and the error was logged because the life end of the IP suction pump was reached, that is, an IP conveyance count of 135,000 (3 years) was exceeded. Replace the pump.	☞ {MT:21.5}

Error Code	Error Name	Occurrence Condition	Analysis Flow
11906	**Laser life end**	The message appeared because a predetermined cumulative laser illumination time was exceeded.	☞ {MT:21.5}
11907	**Log information save error during shutdown process**	An error occurred during an RU shutdown process when an attempt was made to save error log/trace information in the FTP server.	☞ {MT:7.}
11950	**Cassette insertion before console connection establishment**	The message appeared and the cassette was ejected because the cassette was inserted before the connection to the console was established.	☞ {MT:14.}
11951	**Cassette setting failure**	The message appeared because the cassette was not inserted all the way in and two seconds elapsed.	-
11960	**Inadequate erasure due to X-ray overdose**	When an erasure mode process was performed during routing processing, an X-ray overdose was detected. Therefore, the message appeared and an inadequately erased IP was returned to the cassette.	-
11970	**Power restoration IP process request**	An incompletely read IP was detected during bootup. Therefore, the message appeared, and the IP was returned to the cassette and ejected.	-
11971	**Power restoration IP erasure request**	An incompletely erased IP was detected during bootup. Therefore, the message appeared, and the IP was returned to the cassette and ejected.	-
11980	**Erasure incompleteness after re-erasure**	Since a high dose was detected during routine processing, the message appeared and a primary erasure process was retried five times. Although the primary erasure process was retried five times, the detected dose was still high. Therefore, the inadequately erased IP was returned to the cassette.	-
12001	**File open error 1 (FTP)**	An attempt was made in the Maintenance Utility to restore the SCN data. However, an error occurred in the FTP server file open sequence.	☞ {MT:7.}

Error Code	Error Name	Occurrence Condition	Analysis Flow
12002	**File read error 1 (FTP)**	An attempt was made in the Maintenance Utility to restore the SCN data. However, an error occurred in the FTP server file read sequence.	☞ {MT:7.}
12003	**File format error 1 (FTP)**	An attempt was made in the Maintenance Utility to back up the SCN data. However, an error occurred in the FTP server file formatting sequence.	☞ {MT:7.}
12004	**File write error 1 (FTP)**	An attempt was made in the Maintenance Utility to back up the SCN data. However, an error occurred in the FTP server file write sequence.	☞ {MT:7.}
12005	**File close error 1 (FTP)**	An attempt was made in the Maintenance Utility to back up the SCN data. However, an error occurred in the FTP server file close sequence.	☞ {MT:7.}
12039	**Console BMP server connection error**	An error occurred during routine processing when an attempt was made to establish the connection to the console BMP server.	☞ {MT:14.}
12040	**Console BMP server communication error**	An error occurred during routine processing when an attempt was made to establish the communication with the console BMP server.	☞ {MT:14.}
12201	**Start-point detection error**	During bootup, error for the start-point detection signal (SSH, SSL) is detected.	☞ {MT:5.9}
12202	**Leading-edge detection error**	During bootup, only error for the leading-edge detection signal (SED1L) is detected.	☞ {MT:5.13}
12203	**SCN sync signal error**	During bootup, an SCN board diagnostic error (no main-scan sync signal is generated) associated with polygon error occurs.	☞ {MT:5.7}

Error Code	Error Name	Occurrence Condition	Analysis Flow
12204	**Polygon index signal error**	During bootup, an SCN board diagnostic error (no polygon index signal is generated) associated with polygon error occurs.	☞ {MT:5.7}
12206	**Interrupt error**	An error occurred during bootup because no edge detection interrupt was generated in the event of a CPU23B-to-SCN23A board interrupt diagnostic check error.	☞ {MT:18.}
12211	**PMT analog power supply error**	During bootup and routine processing, error for the PMT analog power supply signal (+15VOKH, +15VOKL) is detected.	☞ {MT:5.14}
12212	**Laser light intensity error**	During bootup and routine processing, error for the laser OK signal (LD1OKH, LD1OKL) is detected.	☞ {MT:5.15}
12213	**Polygon lock error**	During bootup and routine processing, error for the polygon lock signal (POKL, PONL) is detected.	☞ {MT:5.7}
12214	**Polygon rotation error**	During bootup and routine processing, error is detected for the polygon rotation detection function on the SCN23A board.	☞ {MT:5.16}
12215	**PLL function error**	During bootup and routine processing, error is detected for the PLL function on the SCN23A board.	☞ {MT:5.16}
12216	**Start-point interval error**	During bootup and routine processing, error is detected for the start-point interval function on the SCN23A board.	☞ {MT:5.16}
12217	**High-voltage command value error**	During bootup and routine processing, error is detected for the high-voltage command value diagnostics signal on the SCN23A board.	☞ {MT:5.16}
12218	**High-voltage detection value error**	During bootup and routine processing, error is detected for the high-voltage detection value diagnostics signal on the SCN23A board.	☞ {MT:5.16}
12222	**Laser drive current value error**	During bootup and routine processing, the laser drive current value (LDIF) is more than 1.4 times the factory default value.	☞ {MT:5.10}

Error Code	Error Name	Occurrence Condition	Analysis Flow
12225	**Reading status error**	During routine processing, error is detected for the VSYNC signal on the SCN23A board.	☞ {MT:18.}
12226	**Operation line status error**	During routine processing, error is detected for the SEDTM/FCLKTM signal on the SCN23A board.	☞ {MT:18.}
12241	**Scanner control board error (1)**	During bootup or during routine processing, error is detected for the PLL function, polygon rotation function, startpoint interval function on the SCN23A board.	☞ {MT:5.16}
12242	**Scanner control board error (2)**	During routine processing, because the PMT high-voltage value is not set correctly on the SCN23A board, error is detected for the high-voltage command diagnostics.	☞ {MT:5.16}
12243	**Scanner control board error (3)**	During bootup or during routine processing, error is detected for the start-point mask signal generated from the SCN23A board and the index signal (PINDXL) from the polygonal mirror (POL).	☞ {MT:5.16}
12244	**Scanner control board error (4)**	During routine processing, an SCN board diagnostic error associated with polygon error is detected. Because the PLL on the SCN23A board does not oscillate, a polygon sync signal cannot be detected.	☞ {MT:5.7}
12251	**Photomultiplier control board error (1)**	During bootup or during routine processing, only error for the PMT analog power supply signal (+15VOKH, +15VOKL) is detected (detail code: 008100). Note that if the HV is OFF, the detail code is 008000.	☞ {MT:5.14}
12252	**Photomultiplier control board error (2)**	During bootup or during routine processing, only error for the high-voltage power supply signal (HVOKH, HVOKL) is detected.	☞ {MT:5.14}
12255	**Leading-edge detection error (1)**	During bootup or during routine processing, only error for the leading-edge detection signal (SED1, SED2L) is detected.	☞ {MT:5.13}

Error Code	Error Name	Occurrence Condition	Analysis Flow
12256	**Leading-edge detection timing error**	During routine processing, IP conveyance overrun occurs due to mechanical error or SCN23A board control error, and only error for the SEDTM and FCLKTM signals on the SCN23A board is detected.	☞ {MT:5.13}
12261	**Polygon rotation error (1)**	During bootup, error for the polygon lock signal (PONL, POKL) is detected so that the polygonal mirror function is disabled. The start-point detection (SYN) and leading-edge detection (SED) functions are also disabled.	☞ {MT:5.7}
12262	**Polygon rotation error (2)**	During bootup or during routine processing, error for the polygon lock signal (PONL, POKL) and error for the start-point interval function and polygon rotation detection function on the SCN23A/SCT23B board are detected (detail code: 003400).	☞ {MT:5.7}
12263	**Polygon rotation error (3)**	During bootup or during routine processing, only error for the lock signal (POKL, PONL) from the polygonal mirror (POL) is detected (detail code: 002001). If error for the SEDTM or FCLKTM signal on the SCN23A board is detected, the detail code is 002003.	☞ {MT:5.7}
12264	**Polygon rotation error (4)**	During bootup or during routine processing, error for the signals (PONL, POKL, PINDXL) from the polygonal mirror and the SEDTM signal on the SCN23A board is detected (detail code: 001002). Alternatively, error for the index signal (PINDXL) from the polygonal mirror and the SEDTM and FCLKTM signals on the SCN23A board is detected (detail code: 001000). Alternatively, error for the signals (POKL, PINDXL) from the polygonal mirror and the SEDTM signal on the SCN23A board is detected (error code: 101000).	☞ {MT:5.7}
12271	**Laser unlit error (1)**	During routine processing, the laser (LDD) and start-point detection (SYN) functions are disabled due to blow of the fuse (G011 and H011 on the SCN23A board) or laser failure (detail code: 805413, C05413, 00503).	☞ {MT:5.8}

Error Code	Error Name	Occurrence Condition	Analysis Flow
12272	**Insufficient laser light intensity**	During routine processing, the laser light intensity is less than 50%, and the laser light intensity error signal (LD1OKL, LD1OKH) is detected (detail code: 004000). Alternatively, the laser light intensity error signal (LD1OKL, LD1OKH) and laser drive current value (LDIF) error are detected (detail code: 014000).	☞ {MT:13.}
12273	**Laser life warning**	During routine processing, the laser drive current value (LDIF) is more than 1.4 times the factory default value.	☞ {MT:5.10}
12281	**Start-point detection error (1)**	During bootup, the disabled state of the start-point detection (SYN) function, and error for the PLL function and polygon rotation detection function on the SCN23A board are detected (detail code: 801C03). Alternatively, the disabled state of the start-point detection (SYN) function, and error for the PLL function on the SCN23A board are detected (detail code: 800C03). Alternatively, during routine processing, the disabled state of the start-point detection (SYN) function, and error for the PLL function and polygon rotation detection function on the SCN23A board are detected (detail code: 801401).	☞ {MT:5.9}
12282	**Start-point detection error (2)**	During bootup and routine processing, only error for the start-point interval function on the SCN23A board is detected (detail code: 000400). Alternatively, error for the start-point interval function and polygon rotation detection function on the SCN23A board is detected (detail code: 001401).	☞ {MT:5.9}
12283	**Scanning optics unit board error during bootup**	During bootup, the laser (LDD), start-point detection (SYN), and leading-edge detection (SED) functions are disabled due to laser failure or disconnected connector.	☞ {MT:5.10}
12284	**LD monitor value error warning**	During IP reading, the laser drive current value (LDIF) becomes more than 1.4 times the factory default value.	☞ {MT:5.10}

Error Code	Error Name	Occurrence Condition	Analysis Flow
12285	**HV command value error warning**	During IP reading, error is detected for the HV command value signal sent from the SCN23A board to the PMT23A board. The difference between MIN and MAX of the monitor value relative to the setup value is out of specification.	☞ {MT:5.14}
12286	**HV detection value error warning**	During routine processing, error is detected for the HV detection value signal of the PMT23A board. The difference between MIN and MAX of the monitor value relative to the setup value is out of specification.	☞ {MT:5.14}
12287	**Image data variation or image signal connector error during routine processing**	An abnormal image data change was detected when the image data transfer diagnostics was conducted for scanner diagnostics during routine processing. In the image data transfer diagnostics for scanner diagnostics during routine processing, an abnormal virtual data change, disconnected image signal connector, or erroneous connector connection was detected.	☞ {MT:5.12}
12291	**Reading sequence error**	During routine processing, error for the VSYNC signal on the SCN23A board is detected after IP reading is completed (detail code: 000002).	☞ {MT:18.}
12292	**Reading sequence error during routine (2)**	Reading is completed by any interrupt other than the leading-edge detection interrupt or end-of-screen interrupt. At the same time, an insufficient number of output lines and a too-early start of reading are detected (detail code: 000003).	☞ {MT:4.30}
12295	**Scanner transmission/reception error**	A scanner unit abnormality was detected while control communication is established between the CPU23B board and SCN23A board during bootup, during routine processing, or in the Maintenance Utility. Therefore, the control communication did not normally end.	☞ {MT:5.16}
12296	**Scanner send sum check error**	During bootup, during routine processing, or in the Maintenance Utility, control communication between the CPU23B board and SCN23A board can be done; however, sum check error is detected from the SCN23A board.	☞ {MT:5.16}
12297	**Communication receive size error**	During bootup, or during routine processing, or in the Maintenance Utility, communication between the CPU23B board and SCN23A board can be done; however, data size error is detected from the SCN23A board.	☞ {MT:5.16}

Error Code	Error Name	Occurrence Condition	Analysis Flow
12298	**Scanner retry error**	During routine processing, because scanner-related error is detected, the IP is returned to the cassette and scanner initialization is performed, with a retry made for routine processing.	☞ {MT:5.11}
12299	**Error for scanner, etc.**	During bootup or routine processing, a combination of errors that should not have logically occurred were generated.	-
12318	**Side-positioning grip home positioning retry**	The side-positioning conveyor roller grip release motor (MC2) was driven during bootup or routine processing to perform a home positioning operation for the side-positioning grip. However, the side-positioning grip HP sensor (SC1) did not OPEN within a predetermined period of time. Therefore, a retry was performed.	☞ {MT:4.20}
12319	**Side-positioning start position detection retry**	The side-positioning latch mechanism driving motor (MC3) was driven during bootup or routine processing to detect a side-positioning start position. However, the side-positioning latch stroke sensor (SC10) did not CLOSE within a predetermined period of time. Therefore, a retry was performed.	☞ {MT:4.21}
12320	**Side-positioning mechanism home positioning retry**	The side-positioning latch mechanism driving motor (MC3) was driven during bootup or routine processing to perform a home positioning operation for the side-positioning mechanism. However, the side-positioning latch stroke sensor (SC10) did not OPEN within a predetermined period of time. Therefore, a retry was performed.	☞ {MT:4.21}
12322	**Subscanning grip position search retry**	When a subscanning grip position search was conducted during bootup, it was found that the driving-side grip roller release HP sensor (SZ3) or driven-side grip roller release HP sensor (SZ2) was not CLOSED. Therefore, a retry was performed.	☞ {MT:4.26}
12323	**Driving-side grip roller grip retry**	When the driving-side grip roller performed a grip operation during bootup, the driving-side grip roller release HP sensor (SZ3) was not OPEN. Therefore, a retry was performed.	☞ {MT:4.26}

Error Code	Error Name	Occurrence Condition	Analysis Flow
12324	**Driven-side grip roller grip retry**	When the driven-side grip roller performed a fast grip operation during bootup, the driven-side grip roller release HP sensor (SZ2) was not OPEN. Therefore, a retry was performed.	☞ {MT:4.26}
12325	**Cassette cover closing mechanism HP release retry**	The cassette cover closing mechanism driving motor (MA2) was driven during bootup or routine processing to perform a home position release operation for the cassette cover closing mechanism. However, the cassette cover closing mechanism HP sensor (SA8) did not OPEN within a predetermined period of time. Therefore, a retry was performed.	☞ {MT:4.12}
12326	**Cassette cover closing mechanism home positioning retry**	The cassette cover closing mechanism driving motor (MA2) was driven during bootup or routine processing to perform a home positioning operation for the cassette cover closing mechanism. However, the cassette cover closing mechanism HP sensor (SA8) did not CLOSE within a predetermined period of time. Therefore, a retry was performed.	☞ {MT:4.12}
12329	**Cassette cover opening mechanism home positioning retry (1)**	The cassette cover opening mechanism driving motor (MA1) was driven by one pulse during bootup or routine processing to perform a home positioning operation for the cassette cover opening mechanism. However, the cassette cover opening mechanism HP sensor (SA7) did not CLOSE within a predetermined period of time. Therefore, a retry was performed.	☞ {MT:4.15}
12330	**Cassette cover opening mechanism home positioning retry (2)**	The cassette cover opening mechanism driving motor (MA1) was driven during bootup or routine processing to perform a home positioning operation for the cassette cover opening mechanism. However, the cassette cover opening mechanism HP sensor (SA7) did not CLOSE within a predetermined period of time. Therefore, a retry was performed.	☞ {MT:4.15}
12331	**Cassette cover opening mechanism home positioning retry**	The cassette cover opening mechanism driving motor (MA1) was driven during bootup or routine processing to perform a home positioning operation for the cassette cover opening mechanism. However, the cassette cover opening mechanism HP sensor (SA7) did not OPEN within a predetermined period of time. Therefore, a retry was performed.	☞ {MT:4.15}
12335	**IP suction sensor error during bootup**	It was found during bootup that the IP suction sensor (SA5) was CLOSED (the IP was vacuum-retained).	☞ {MT:4.18}

Error Code	Error Name	Occurrence Condition	Analysis Flow
12336	**Suction arm home positioning retry (1)**	The suction arm driving motor (MA3) was driven by one pulse during bootup or routine processing to perform a home positioning operation for the suction arm. However, the suction arm HP sensor (SA6) did not CLOSE within a predetermined period of time. Therefore, a retry was performed.	☞ **{MT:4.16}**
12337	**Suction arm home positioning retry (2)**	The suction arm driving motor (MA3) was driven during bootup or routine processing to perform a home positioning operation for the suction arm. However, the suction arm HP sensor (SA6) did not CLOSE within a predetermined period of time. Therefore, a retry was performed.	☞ **{MT:4.16}**
12338	**Suction arm home positioning retry**	The suction arm driving motor (MA3) was driven during bootup or routine processing to perform a home positioning operation for the suction arm. However, the suction arm HP sensor (SA6) did not OPEN within a predetermined period of time. Therefore, a retry was performed.	☞ **{MT:4.16}**
12344	**IP holding arm release retry during bootup (1)**	When an attempt was made to release the cassette IP holding arm from the IP holding position during bootup, it was found that the cassette IP holding sensor (SA10) was OPEN (the IP was held and a new cassette was detected). Therefore, a retry was performed.	☞ **{MT:4.14}**
12345	**IP holding arm release retry during bootup (2)**	When an attempt was made to release the cassette IP holding arm from the cassette cover opening position during bootup, it was found that the cassette IP holding sensor (SA10) was OPEN (the IP was held and a new cassette was detected). Therefore, a retry was performed.	☞ **{MT:4.14}**
12350	**Subscanning grip free rotation retry**	When the subscanning unit grip roller freely rotated during bootup, the driving-side grip roller release HP sensor (SZ3) was not OPEN. Therefore, a retry was performed.	☞ **{MT:4.26}**
12351	**Driving-side grip roller fast grip release retry**	When a fast grip release operation was performed for the driving-side grip roller during bootup, the driving-side grip roller release HP sensor (SZ3) was not OPEN. Therefore, a retry was performed.	☞ **{MT:4.26}**

Error Code	Error Name	Occurrence Condition	Analysis Flow
12352	**Subscanning IP ejection grip retry**	When a subscanning IP ejection grip operation was performed during bootup or routine processing, the driving-side grip roller release HP sensor (SZ3) was not CLOSED. Therefore, a retry was performed.	☞ {MT:4.26}
12357	**Subscanning pre-reading grip retry (1)**	When the subscanning unit performed a pre-reading grip operation during bootup or routine processing, the driven-side grip roller release HP sensor (SZ2) was not CLOSED. Therefore, a retry was performed.	☞ {MT:4.26}
12361	**Cassette cover opening mechanism home positioning retry (1)**	The cassette cover opening mechanism driving motor (MA1) was driven by one pulse during bootup or routine processing to perform a home positioning operation for the cassette cover opening mechanism. However, the cassette cover opening mechanism HP sensor (SA7) did not CLOSE within a predetermined period of time. Therefore, a retry was performed.	☞ {MT:4.15}
12362	**Cassette cover opening mechanism home positioning retry (2)**	The cassette cover opening mechanism driving motor (MA1) was driven during bootup or routine processing to perform a home positioning operation for the cassette cover opening mechanism. However, the cassette cover opening mechanism HP sensor (SA7) did not CLOSE within a predetermined period of time. Therefore, a retry was performed.	☞ {MT:4.15}
12363	**Cassette cover opening mechanism home positioning retry**	The cassette cover opening mechanism driving motor (MA1) was driven during bootup or routine processing to perform a home positioning operation for the cassette cover opening mechanism. However, the cassette cover opening mechanism HP sensor (SA7) did not OPEN within a predetermined period of time. Therefore, a retry was performed.	☞ {MT:4.15}
12367	**Driven-side grip roller grip speed correction retry**	When a subscanning grip speed correction operation was performed during bootup or routine processing, it was found that the driven-side grip roller release HP sensor (SZ2) was not OPEN. Therefore, a retry was performed.	☞ {MT:4.26}
12370	**Dust removal home positioning retry**	The dust removal motor (MZ3) was driven during bootup or routine processing to perform a home positioning operation for the dust removal mechanism. However, the dust removal HP sensor (SZ5) did not OPEN within a predetermined period of time. Therefore, a retry was performed.	☞ {MT:4.27}

Error Code	Error Name	Occurrence Condition	Analysis Flow
12371	**Dust removal mechanism drive retry (1)**	The dust removal motor (MZ3) was driven by the dust removal mechanism during user utility processing. However, the dust removal HP sensor (SZ5) did not CLOSE within a predetermined period of time. Therefore, a retry was performed.	☞ {MT:4.27}
12372	**Dust removal mechanism drive retry (2)**	The dust removal motor (MZ3) was driven by the dust removal mechanism during user utility processing. However, the dust removal HP sensor (SZ5) did not OPEN within a predetermined period of time. Therefore, a retry was performed.	☞ {MT:4.27}
12373	**Cassette hold retry**	The cassette hold pin solenoid (SOLA1) turned OFF (cassette hold) during routine processing. However, the cassette hold sensor (SA2) detected that a cassette hold was released (CLOSED). Therefore, a retry was performed.	☞ {MT:4.9}
12376	**Cassette undetected in cassette hold sequence**	The cassette hold pin solenoid (SOLA1) turned OFF (cassette hold) during routine processing. However, the cassette ejection sensor (SA11) detected that no cassette was present (OPEN).	☞ {MT:4.9}
12379	**Cassette hold release retry**	The cassette hold pin solenoid (SOLA1) turned ON (to release a cassette hold) during routine processing. However, the cassette hold sensor (SA2) detected a cassette hold (OPEN). Therefore, a retry was performed.	☞ {MT:4.9}
12381	**Debris fall prevention shutter close retry**	The cassette cover opening mechanism driving motor (MA1) was driven during routine processing to close the debris fall prevention shutter. However, it was found that the debris fall prevention shutter sensor (SA3) was OPEN (the shutter was open). Therefore, a retry was performed.	☞ {MT:4.13}
12382	**Old cassette loading retry**	The cassette cover opening mechanism driving motor (MA1) was driven during routine processing to prevent an IP drop. However, it was found that the cassette IP holding sensor (SA10) was OPEN (old cassette). Therefore, a retry was performed.	☞ {MT:4.14}
12383	**Suction arm home positioning**	When a suction arm home position was checked during bootup or routine processing, it was found that the suction arm HP sensor (SA6) was OPEN. Therefore, the suction arm was returned to its home position.	☞ {MT:4.16}

Error Code	Error Name	Occurrence Condition	Analysis Flow
12386	**IP drop detection (1)**	After the cassette cover was opened during routine processing, it was found that the IP dropping sensor (SA4) was CLOSED (due to IP detection).	☞ {MT:4.17}
12388	**IP drop detection (2)**	After IP suction during routine processing, it was found that the IP dropping sensor (SA4) was CLOSED (due to IP detection).	☞ {MT:4.17}
12389	**IP suction retry**	The IP suction pump (PA1) turned ON during routine processing to perform an IP suction operation. However, it was found that the IP suction sensor (SA5) was CLOSED (the IP was not vacuum-retained). Therefore, a retry was performed.	☞ {MT:4.18}
12390	**Feed IP suction retry**	It was found during routine processing that the IP suction sensor (SA5) was CLOSED (the IP was not vacuum-retained) prior to the IP feed air leak sequence. Therefore, an IP feed operation was retried.	☞ {MT:4.18}
12391	**IP holding arm release error (2)**	The cassette cover opening mechanism driving motor (MA1) was driven during routine processing to release the cassette IP holding arm from the IP holding position after IP suction. However, it was found that the cassette IP holding sensor (SA10) was CLOSED (the IP was not held and an old cassette was detected).	☞ {MT:4.14}
12392	**Feed suction IP leak error**	When an IP feed leak operation was performed during routine processing, it was found that the IP suction sensor (SA5) was OPEN (the IP was vacuum-retained).	☞ {MT:4.18}
12393	**Feed IP fall prevention retry**	The cassette cover opening mechanism driving motor (MA1) was driven during routine processing to hold an IP. However, it was found that the cassette IP holding sensor (SA10) was OPEN (the IP was held and a new cassette was detected). Therefore, a retry was performed.	☞ {MT:4.14}
12396	**Feed IP side-positioning conveyance retry (1)**	The IP transport motors (MA4 and MC1) were driven during routine processing to perform a feed conveyance operation. However, IP sensor 2 (SG1) in the housing unit did not CLOSE within a predetermined period of time. Therefore, a retry was performed.	☞ {MT:4.5}

Error Code	Error Name	Occurrence Condition	Analysis Flow
12397	**Feed IP side-positioning conveyance retry (2)**	The IP transport motors (MA4 and MC1) were driven during routine processing to perform a feed conveyance operation. However, IP sensor 1 (SC3) in the side-positioning conveyor unit did not CLOSE within a predetermined period of time. Therefore, a retry was performed.	☞ {MT:4.4}
12399	**IP length measurement retry**	An IP length measurement process was performed with IP sensor 2 (SG1) in the housing unit in the feed conveyance sequence during routine processing. However, IP sensor 2 (SG1) CLOSED within a short period of time. Therefore, the IP length measurement process was retried.	☞ {MT:4.6}
12403	**Barcode reading retry**	The barcode could not be read during routine processing. Therefore, the barcode reading operation was retried.	☞ {MT:4.25}
12408	**Side-positioning grip release drive retry**	The side-positioning conveyor roller grip release motor (MC2) was driven during bootup or routine processing to release the side-positioning grip. However, the side-positioning grip release position sensor (SC2) did not OPEN within a predetermined period of time. Therefore, a retry was performed.	☞ {MT:4.20}
12410	**Side-positioning grip drive retry**	The side-positioning conveyor roller grip release motor (MC2) was driven for the side-positioning grip during bootup or routine processing. However, the side-positioning grip HP sensor (SC1) did not OPEN within a predetermined period of time. Therefore, a retry was performed.	☞ {MT:4.20}
12415	**Subscanning conveyance error (2)**	The subscanning motor (MZ1) was driven during routine processing to perform a reading conveyance operation. As a result, a leading-edge detection interrupt occurred. However, IP sensor 1 (SC3) in the side-positioning conveyor unit did not OPEN within a predetermined period of time.	☞ {MT:4.29}
12416	**FFM drive W.F. abnormal**	The subscanning motor (MZ1) was driven during routine processing to perform a reading conveyance operation. However, a W.F. abnormality was detected.	☞ {MT:4.28}
12417	**Driven-side grip roller grip error (2)**	The driven/driving grip roller driving motor (MZ2) was driven during routine processing to let the driven-side grip roller perform a grip operation. However, the driven-side grip roller release HP sensor (SZ2) did not OPEN within a predetermined period of time.	☞ {MT:4.26}

Error Code	Error Name	Occurrence Condition	Analysis Flow
12419	**Post-reading conveyance retry**	The IP transport motors (MA4, MC1, and MZ1) were driven during routing processing to perform a post-reading conveyance operation. However, IP sensor 2 (SG1) in the housing unit did not CLOSE (did not detect an IP) within a predetermined period of time. Therefore, a retry was performed.	☞ **{MT:4.8}**
12421	**Load IP suction retry**	The IP suction pump (PA1) turned ON during routine processing to perform an IP hold release operation. However, it was found that the IP suction sensor (SA5) was CLOSED (the IP was not vacuum-retained). Therefore, a retry was performed.	☞ **{MT:4.18}**
12422	**Load IP drop retry (1)**	After an IP hold release operation was performed during routine processing, it was found that the IP dropping sensor (SA4) was CLOSED (due to IP detection). Therefore, a retry was performed.	☞ **{MT:4.17}**
12423	**Load IP drop retry (2)**	After the cassette cover was closed during routine processing, it was found that the IP dropping sensor (SA4) was CLOSED (due to IP detection). Therefore, a retry was performed.	☞ **{MT:4.17}**
12424	**Load IP hold retry**	The cassette cover opening mechanism driving motor (MA1) was driven during routine processing to prevent an IP drop. However, it was found that the cassette IP holding sensor (SA10) was CLOSED (the IP was not held and an old cassette was detected). Therefore, a retry was performed.	☞ **{MT:4.14}**
12428	**Load IP hold release retry (1)**	The cassette cover opening mechanism driving motor (MA1) was driven during routine processing to release an IP hold in the load sequence. However, it was found that the cassette IP holding sensor (SA10) was OPEN (the IP was held and a new cassette was detected). Therefore, a retry was performed.	☞ **{MT:4.14}**
12429	**Load IP hold release retry (2)**	The cassette cover opening mechanism driving motor (MA1) was driven during routine processing to release an IP hold in the load sequence. However, it was found that the cassette IP holding sensor (SA10) was OPEN (the IP was held and a new cassette was detected). Therefore, a retry was performed.	☞ **{MT:4.14}**

Error Code	Error Name	Occurrence Condition	Analysis Flow
12430	**Cassette cover opening mechanism HP drive retry**	The cassette cover opening mechanism driving motor (MA1) was driven to perform a home positioning operation for the cassette cover opening mechanism during routine processing. However, it was found that the debris fall prevention shutter sensor (SA3) was CLOSED (the shutter was closed). Therefore, a retry was performed.	☞ {MT:4.13}
12432	**Load IP suction relief retry**	When a suction relief operation was performed in the IP load sequence during routine processing, it was found that the IP suction sensor (SA5) was OPEN (the IP was vacuum-retained). Therefore, a retry was performed.	☞ {MT:4.18}
12436	**Cassette cover closing mechanism drive retry**	The cassette cover closing mechanism driving motor (MA2) was driven during routine processing. However, the cassette cover closing mechanism HP sensor (SA8) did not CLOSE within a predetermined period of time. Therefore, a retry was performed.	☞ {MT:4.12}
12438	**Cassette cover closing mechanism home positioning retry**	The cassette cover closing mechanism driving motor (MA2) was driven during bootup or routine processing to perform a home positioning operation for the cassette cover closing mechanism. However, the cassette cover closing mechanism HP sensor (SA8) did not CLOSE within a predetermined period of time. Therefore, a retry was performed.	☞ {MT:4.12}
12439	**Cassette cover closing mechanism home positioning retry error**	The cassette cover closing mechanism driving motor (MA2) was driven during bootup or routine processing to perform a home positioning operation for the cassette cover closing mechanism. However, the cassette cover closing mechanism HP sensor (SA8) did not CLOSE within a predetermined period of time. Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.12}
12440	**Cassette cover closing mechanism close positioning error**	The cassette cover closing mechanism driving motor (MA2) was driven during bootup or routine processing to place the cassette cover closing mechanism in the close position. However, the cassette cover CLOSE position sensor (SA12) did not CLOSE within a predetermined period of time.	☞ {MT:4.12}
12441	**Cassette cover closing mechanism HP check**	When a home position check was performed on the cassette cover closing mechanism during bootup or routine processing, the suction arm HP sensor (SA6) was OPEN. Therefore, the cassette cover closing mechanism was placed at its home position.	☞ {MT:4.16}

Error Code	Error Name	Occurrence Condition	Analysis Flow
12442	**IP found in remaining IP ejection cassette during bootup**	When a remaining IP ejection process was performed during bootup, an IP was found in the cassette.	-
12443	**Bootup cassette cover opening mechanism home positioning retry**	When the cassette cover opening mechanism was moved from the reference position to the home position during bootup, it was found that the IP dropping sensor (SA4) was CLOSED (due to IP detection). Therefore, a retry was performed.	☞ {MT:4.17}
12444	**Driven-side grip roller grip error**	When the driven-side grip roller performed a grip operation during routine processing, it was found that the driven-side grip roller release HP sensor (SZ2) was not OPEN.	☞ {MT:4.26}
12446	**Subscanning grip speed timeout (2)**	The driven/driving grip roller driving motor (MZ2) was driven during routine processing to let the driven-side grip roller perform a grip operation. However, the time required for the driven-side grip roller release HP sensor (SZ2) to switch from the CLOSE state to the OPEN state was not as specified. (Since the required time was significantly different from the specified time, a correction must be made.)	☞ {MT:4.26}
12447	**Subscanning pre-reading grip retry error (2)**	When the subscanning unit performed a pre-reading grip operation during bootup or routine processing, the driven-side grip roller release HP sensor (SZ2) was not CLOSED. Although retries were performed, the maximum retry count was exceeded.	☞ {MT:4.26}
12448	**Subscanning pre-reading grip retry (2)**	When the subscanning unit performed a pre-reading grip operation during bootup or routine processing, the driven-side grip roller release HP sensor (SZ2) was not CLOSED. Therefore, a retry was performed.	☞ {MT:4.26}
12449	**Cassette cover opening mechanism operation error**	The cassette cover opening mechanism driving motor (MA1) was driven to release an IP hold in the load sequence during routine processing. However, it was found that the cassette cover opening mechanism HP sensor (SA7) was CLOSED.	☞ {MT:4.15}

Error Code	Error Name	Occurrence Condition	Analysis Flow
12452	**No remaining-IP ejection empty cassette during bootup**	When a remaining IP ejection process was performed during bootup, a remaining IP was detected in the machine. However, it was found that there was no ejection cassette in the cassette set unit.	☞ **{MT:4.10}**
12455	**Two IPs remaining during bootup**	When a remaining IP search process was performed during bootup, the IP dropping sensor (SA4) in the cassette set unit and IP sensor 1 (SC3) in the side-positioning conveyor unit were both CLOSED (due to IP detection). It was therefore concluded that there were a plurality of IPs in the machine.	☞ **{MT:4.1}**
12460	**Old/new cassette judgment retry during bootup**	When the cassette IP holding arm held an IP during bootup to determine whether an old or new cassette is used, it was found that the cassette IP holding sensor (SA10) was CLOSED (the IP was not held and an old cassette was detected). Therefore, a retry was performed.	☞ **{MT:4.14}**
12464	**Side-positioning reference block home positioning retry**	The side-positioning reference block driving motor (MC4) was driven during bootup or routine processing to place the side-positioning reference block at its home position. However, the side-positioning reference block HP sensor (SC7) did not CLOSE within a predetermined period of time. Therefore, a retry was performed.	☞ **{MT:4.23}**
12465	**Side-positioning reference block reference surface positioning retry**	The side-positioning reference block driving motor (MC4) was driven during bootup or routine processing to perform a reference surface positioning operation for the side-positioning reference block. However, the side-positioning reference block HP sensor (SC7) did not CLOSE within a predetermined period of time. Therefore, a retry was performed.	☞ **{MT:4.23}**
12466	**Side-positioning reference block return retry**	The side-positioning reference block driving motor (MC4) was driven during bootup or routine processing to return the side-positioning reference block. However, the side-positioning reference block HP sensor (SC7) did not OPEN within a predetermined period of time. Therefore, a retry was performed.	☞ **{MT:4.23}**
12467	**Side-positioning latch home positioning retry**	The side-positioning latch mechanism driving motor (MC3) was driven during bootup or routine processing to perform a home positioning operation for the side-positioning latch. However, the side-positioning latch position sensor (SC8) did not OPEN within a predetermined period of time. Therefore, a retry was performed.	☞ **{MT:4.24}**

Error Code	Error Name	Occurrence Condition	Analysis Flow
12468	**Side-positioning latch HP detection retry**	The side-positioning latch mechanism driving motor (MC3) was driven during bootup or routine processing to detect the home position of the side-positioning latch. However, the side-positioning latch position sensor (SC8) did not OPEN within a predetermined period of time. Therefore, a retry was performed.	☞ {MT:4.24}
12469	**Side-positioning latch protrusion retry**	The side-positioning latch mechanism driving motor (MC3) was driven during bootup or routine processing to protrude the side-positioning latch. However, the side-positioning latch position sensor (SC8) did not OPEN within a predetermined period of time. Therefore, a retry was performed.	☞ {MT:4.24}
12474	**Feed IP conveyance error (3)**	The IP transport motors (MA4 and MC1) were driven during routine processing to perform a feed conveyance operation. However, IP sensor 2 (SG1) in the housing unit did not CLOSE within a predetermined period of time. Therefore, a retry was performed.	☞ {MT:4.5}
12510	**Message format error**	An illegal command was received from the CL during bootup or routine processing.	-
12520	**Message transmission failure**	An attempt to transmit a message from the RU to the CL failed during bootup or routine processing.	☞ {MT:14.}
12521	**RES message receiving time-out**	During bootup or routine processing, a REQUEST message is transmitted from RU to CL, however, RU cannot receive a RESPONSE message, thus resulting in a time-out.	☞ {MT:14.}
12522	**ACK receiving time-out**	During bootup or routine processing, a message is transmitted from RU to CL, however, RU cannot receive ACK, thus resulting in a time-out.	☞ {MT:14.}
12523	**SET command CL receiving error**	Although the SET command was transmitted from the RU during routine processing, a signal other than OK was received as a response from the CL. After the processed IP returns to a cassette, the cassette is ejected so that the associated message appears on the RU panel.	-
12524	**Forbidden Response to Start-Process command**	Although the Start-Process command was transmitted from the RU to the CL immediately after cassette insertion during routine processing, a rejection command was received from the CL. After the processed IP returns to a cassette, the cassette is ejected so that the associated message appears on the RU panel.	☞ {MT:14.}

Error Code	Error Name	Occurrence Condition	Analysis Flow
12525	**Forbidden Response to INQ command**	Although the INQ command was transmitted from the RU to the CL immediately after cassette insertion during routine processing, a rejection command was received from the CL. After the processed IP returns to a cassette, the cassette is ejected so that the associated message appears on the RU panel.	☞ {MT:14.}
12526	**Forbidden Response to Start-Read command**	Although the Start-Read command was transmitted from the RU immediately before IP reading during routine processing, a rejection command was received from the CL. After the processed IP returns to a cassette, the cassette is ejected so that the associated message appears on the RU panel.	☞ {MT:14.}
12589	**Image read error**	An error occurred during routine processing when an attempt was made to read image data from an image area in the SDRAM on the CPU23B board.	☞ {MT:18.}
12591	**Image read timeout**	A timeout occurred during routine processing when an attempt was made to read image data from an image area in the SDRAM on the CPU23B board.	☞ {MT:18.}
12592	**Image read error**	An error occurred in the scanner correction mode of the Maintenance Utility when an attempt was made to read image data from an image area in the SDRAM on the CPU23B board.	☞ {MT:18.}
12594	**Error in image transfer from SCN board**	During normal use or in the Maintenance Utility, the whole or part of an image was not transferred from the SCN23A board to the CPU23B board.	☞ {MT:18.}
12711	**Erasure unit safety thermostat activation**	During bootup or routine processing, the safety thermostat (TSWE1) was activated because the temperature of the erasure unit lamp house was unduly raised.	☞ {MT:6.5}
12730	**ERS23A board fuse blowout**	It was detected during bootup or routine processing that the fuse mounted on the ERS23A board was blown. You cannot replace the fuse. Replace the erasure unit or ERS23A board.	☞ {MT:9.}
12740	**ERS board communication error**	During bootup, an error was detected in the communication between the CPU23B board and ERS board.	☞ {MT:18.}

Error Code	Error Name	Occurrence Condition	Analysis Flow
12770	**INV board port 1 failure**	It was detected during bootup or routine processing that the INV-board-mounted fuse for port 1 was blown. For the INV board location and port numbers, refer to the MD volume.	☞ {MT:6.7}
12771	**INV board port 2 failure**	It was detected during bootup or routine processing that the INV-board-mounted fuse for port 2 was blown. For the INV board location and port numbers, refer to the MD volume.	☞ {MT:6.7}
12772	**INV board port 3 failure**	It was detected during bootup or routine processing that the INV-board-mounted fuse for port 3 was blown. For the INV board location and port numbers, refer to the MD volume.	☞ {MT:6.7}
12773	**INV board port 4 failure**	It was detected during bootup or routine processing that the INV-board-mounted fuse for port 4 was blown. For the INV board location and port numbers, refer to the MD volume.	☞ {MT:6.7}
12774	**INV board port 5 failure**	It was detected during bootup or routine processing that the INV-board-mounted fuse for port 5 was blown. For the INV board location and port numbers, refer to the MD volume.	☞ {MT:6.7}
12775	**INV board port 6 failure**	It was detected during bootup or routine processing that the INV-board-mounted fuse for port 6 was blown. For the INV board location and port numbers, refer to the MD volume.	☞ {MT:6.7}
12790	**Wait for erasure due to out-of-range temperature**	During routine processing, the erasure unit internal temperature did not reach a specified level within 60 seconds. Therefore, the message appeared and erasure degeneration occurred.	☞ {MT:6.4}
12791	**Timeout after wait for erasure due to out-of-range temperature**	During routine processing, temperature buildup was awaited before IP erasure because the erasure unit internal temperature was out of range. However, a timeout occurred. As a result, erasure degeneration occurred.	☞ {MT:6.4}
12792	**Out-of-range temperature during erasure**	The temperature was out of range during erasure.	☞ {MT:6.4}

Error Code	Error Name	Occurrence Condition	Analysis Flow
12801	**MA1 fuse blowout**	It was detected during bootup or routine processing that the F2 fuse on the SND23A board (MA1 fuse) was blown.	☞ {MT:9.}
12802	**MA3 fuse blowout**	It was detected during bootup or routine processing that the F3 fuse on the SND23A board (MA3 fuse) was blown.	☞ {MT:9.}
12803	**MA4 fuse blowout**	It was detected during bootup or routine processing that the F4 fuse on the SND23A board (MA4 fuse) was blown.	☞ {MT:9.}
12804	**SPSV fuse blowout**	It was detected during bootup or routine processing that the F5 fuse on the SND23A board (a common fuse for the solenoids, pumps, and valves) was blown.	☞ {MT:9.}
12805	**ALLSA fuse blowout**	It was detected during bootup or routine processing that the F1 fuse on the SND23A board (a common fuse for the daylight section sensors) was blown.	☞ {MT:9.}
12806	**MC1 fuse blowout**	It was detected during bootup or routine processing that the F2 fuse on the SND23B board (MC1 fuse) was blown.	☞ {MT:9.}
12807	**MC3 fuse blowout**	It was detected during bootup or routine processing that the F3 fuse on the SND23B board (MC3 fuse) was blown.	☞ {MT:9.}
12808	**MZ2 fuse blowout**	It was detected during bootup or routine processing that the F6 fuse on the SND23B board (MZ2 fuse) was blown.	☞ {MT:9.}
12809	**Scanner fan fuse blowout**	It was detected during bootup or routine processing that the F4 fuse on the SND23B board (FANG1 or FANG2 fuse) was blown.	☞ {MT:9.}
12811	**MZ1 fuse blowout**	It was detected during bootup or routine processing that the F5 fuse on the SND23B board (the fuse for protecting the subscanning motor (MZ1)) was blown.	☞ {MT:9.}

Error Code	Error Name	Occurrence Condition	Analysis Flow
12812	**IP conveyance sensor fuse blowout**	It was detected during bootup or routine processing that the F1 fuse on the SND23B board (the fuse for protecting the side-positioning conveyor sensors (SC1 to SC3 and SC6 to SC10), subscanning unit sensors (SZ2, SZ3, and SZ5), and housing unit sensor (SG1)) was blown.	☞ {MT:9.}
12820	**SDRAM test error**	In the Maintenance Utility, an error occurred when an SDRAM diagnostic check was performed on the CPU23B board.	☞ {MT:18.}
12821	**CPU23B board flash ROM diagnostic error**	When a board check was conducted in the Maintenance Utility, an abnormality was detected in the flash ROM read/write test.	☞ {MT:18.}
12822	**CPU23B board interrupt diagnostic error**	When a board check was conducted in the Maintenance Utility, an abnormality was detected in the CPU23B interrupt test.	☞ {MT:18.}
12823	**CPU23B board register diagnostic error**	In the Maintenance Utility, an error occurred when a register diagnostic check was performed on the CPU23B board.	☞ {MT:18.}
12830	**SCN23A board interrupt diagnostic error**	When the SCN23A board was checked in the Maintenance Utility, an abnormality was detected in the interrupt test.	☞ {MT:18.}
12831	**SCN23A board register diagnostic error**	When the SCN23A board was checked in the Maintenance Utility, an abnormality was detected in the register read/write test.	☞ {MT:18.}
12840	**SCN23A board interrupt diagnostic error**	When the SCN23A board was checked in the Maintenance Utility, an abnormality was detected in the interrupt test.	☞ {MT:18.}
12841	**SCN23A board register diagnostic error**	When the SCN23A board was checked in the Maintenance Utility, an abnormality was detected in the register test.	☞ {MT:18.}

Error Code	Error Name	Occurrence Condition	Analysis Flow
12842	**SCN23B board interrupt diagnostic error**	When the SCN23B board was checked in the Maintenance Utility, an abnormality was detected in the interrupt test.	☞ {MT:18.}
12843	**SCN23B board register diagnostic error**	When the SCN23B board was checked in the Maintenance Utility, an abnormality was detected in the register test.	☞ {MT:18.}
12850	**Panel board communication timeout**	When the PNL23A board diagnostic check was performed in the Maintenance Utility, a timeout occurred in the communication with the CPU23B board.	☞ {MT:18.}
12851	**PNL23A board flash ROM diagnostic error**	In the Maintenance Utility, an error occurred when a flash ROM diagnostic check was performed on the PNL23A board.	☞ {MT:18.}
12852	**PNL23A board SDRAM diagnostic error**	In the Maintenance Utility, an error occurred when an SDRAM diagnostic check was performed on the PNL23A board.	☞ {MT:18.}
12853	**PNL23A board self-diagnostic error**	In the Maintenance Utility, an error occurred when flash ROM and SDRAM diagnostic checks were performed on the PNL23A board.	☞ {MT:18.}
12960	**Re-erasure detection**	During routine processing, an IP that was inadequately erased due to X-ray overdose was returned to the cassette. The error occurs only when the log function is turned on for configuration setup purposes.	-
12980	**MUTL mode multiple access warning**	- "MUTL mode" functions are simultaneously activated for the RU. - The function that is entered first is activated, but the function that is entered second is not activated, and error is logged.	-
12990	**FTP server access error**	During bootup and during routine processing, the FTP server cannot be accessed for communication from the RU to the CL. Or, the FTP server may be accessed, but a connection cannot be established.	☞ {MT:14.}
13200	**High-voltage OFF during bootup**	During bootup, the photomultiplier (PMT23A board) high voltage is OFF.	-

Error Code	Error Name	Occurrence Condition	Analysis Flow
13207	**High-voltage ON retry**	During bootup or routine processing, a command error occurred in the status acquisition sequence after high-voltage turn-ON. Therefore, a retry was performed.	-
13210	**Polygon timeout**	During bootup and routine processing, the polygon OK signal is not detected within 7 seconds after turn-ON of the polygonal mirror.	☞ **{MT:5.7}**
13227	**Reading IP size error**	The IP of the size other than the input size is inserted for shading correction of the M-Utility, so that error is detected.	-
13228	**Shading correction data error**	In the shading correction mode of the Maintenance Utility, a correction was made of a non-flat image or a clear portion that was generated due to improper image formatting. Make the shading correction again.	-
13229	**HVCNT value error**	During M-Utility operation, an out-of-spec HV is inputted.	-
13240	**Start-point mask signal warning**	- During bootup or during routine processing, the start-point mask signal issued from the SCN23A board varies by 0.02%, peak to peak. - During bootup or during routine processing, the detection of 12241 error is done with 2% variations.	-
13260	**Main scan interval warning**	During bootup or routine processing, the range of main scan interval variations was outside the upper or lower limit of the error decision value parameter. <User operation> If vibration is applied to the machine from the outside while the adjuster bolts are not lowered, the vibration is transmitted to the scanning optics unit and logged. <Action> Check to ensure that the adjuster bolts are lowered.	-

Error Code	Error Name	Occurrence Condition	Analysis Flow
13270	**LDIFMAX update**	This error occurs when the surrounding temperature around the machine changes drastically. During routine processing checks, it is detected that the LD drive current value varies by more than 5 mA. In order to adjust the insufficient luminosity due to degraded LD (to maintain the same level of luminosity), it is necessary to vary the LD drive current by more than 5 mA. During LDIFMAX update, variations of 5 mA or more are detected.	-
13284	**LD monitor value error warning**	During routine processing, the difference between MIN and MAX of the laser drive current monitor value is out of specification.	☞ {MT:5.10}
13285	**HV command value error warning**	During routine processing, error is detected for the HV command value signal sent from the SCN23A board to the PMT23A board. The difference between MIN and MAX of the monitor value relative to the setup value is out of specification.	☞ {MT:5.14}
13286	**HV detection value error warning**	During routine processing, error is detected for the HV detection value signal of the PMT23A board. The difference between MIN and MAX of the monitor value relative to the setup value is out of specification.	☞ {MT:5.14}
13289	**Format adjustment data error**	In the Maintenance Utility, when format adjustments are performed, out-of-range data is inputted.	-
13290	**Scanner data format error**	When a restore command was executed in the M-Utility to write scanner data from a floppy disk to the IMG board flash ROM, the command did not terminate normally because a scanner data format error was detected.	-
13295	**Scanner send/receive retry warning**	When control communication was established between the CPU23B board and SCN23A board from the Maintenance Utility during bootup or routine processing, a scanner unit error was detected. Error recovery was achieved by performing a retry operation.	-
13312	**Bootup cassette size sensor combination inconsistency**	The cassette size sensors (SA9, SA14, and SA15) detected an abnormal combination during bootup.	☞ {MT:4.11}

Error Code	Error Name	Occurrence Condition	Analysis Flow
13319	**Side-positioning start position detection error**	The side-positioning latch mechanism driving motor (MC3) was driven during bootup or routine processing to detect a side-positioning start position. However, the side-positioning latch stroke sensor (SC10) did not CLOSE within a predetermined period of time.	☞ {MT:4.21}
13320	**Side-positioning latch HP detection error**	The side-positioning latch mechanism driving motor (MC3) was driven during bootup or routine processing to detect the side-positioning home position. However, the side-positioning latch stroke sensor (SC10) did not OPEN within a predetermined period of time.	☞ {MT:4.21}
13321	**Error encountered before side-positioning start position detection**	When an attempt was made during bootup or routine processing to detect a side-positioning start position, the side-positioning latch stroke sensor (SC10) was CLOSED.	☞ {MT:4.21}
13368	**Subscanning grip speed data update (1)**	The speed data was updated during bootup or routine processing to correct the subscanning grip speed.	-
13369	**Driven-side grip roller grip release timeout (great)**	The driven/driving grip roller driving motor (MZ2) was driven during bootup or routine processing to correct the subscanning grip speed. However, the time required for the driven-side grip roller release HP sensor (SZ2) to switch from the CLOSE state to the OPEN state was considerably longer than the specified time.	☞ {MT:4.26}
13417	**Driven-side grip roller grip release timeout (small)**	The driven/driving grip roller driving motor (MZ2) was driven during routine processing to let the driven-side grip roller perform a grip operation. However, the time required for the driven-side grip roller release HP sensor (SZ2) to switch from the CLOSE state to the OPEN state was a bit longer than the specified time.	☞ {MT:4.26}
13468	**Side-positioning latch HP detection error**	The side-positioning latch mechanism driving motor (MC3) was driven during bootup or routine processing to detect the home position of the side-positioning latch. However, the side-positioning latch position sensor (SC8) did not OPEN within a predetermined period of time.	☞ {MT:4.24}
13469	**Side-positioning latch protrusion error**	The side-positioning latch mechanism driving motor (MC3) was driven during bootup or routine processing to protrude the side-positioning latch. However, the side-positioning latch position sensor (SC8) did not OPEN within a predetermined period of time.	☞ {MT:4.24}

Error Code	Error Name	Occurrence Condition	Analysis Flow
13520	**Detection of communication abortion to CL**	During bootup or during routine processing, it is detected that the communication between the CL and the RU is broken.	☞ {MT:14.}
13521	**CL communication failure detected**	During bootup or during routine processing, because the communication between the CL and RU is broken, the connection is suspended and initialization of communication between the CL and RU is performed again.	☞ {MT:14.}
13530	**CL image data receive timeout**	The CL was too late receiving the image data sent from the RU, so that the image was retransmitted from the RU. The network is overloaded, or a communication error occurs due to hardware failure of the network, thereby causing frequent retries.	☞ {MT:14.}

Control Sheet

Issue date	Revision number	Reason	Pages affected
08.15.2005	00	New release (FM4683)	All pages
11.10.2005	01	Corrections (FM4750)	All pages

CR-IR 357 Service Manual

Service Parts List (SP)

How to Use Service Parts List

■ RANK

● Handling RANK characters (parts that are handled in a special manner during parts operation, such as replacement)

Character	Under Warranty	Out of Warranty
R	Must be returned.	Repairable
Q	Must be returned. (We use for analysis.)	Not repairable
T	Must Not be returned. (Consumable part. Not applicable for free of charge.)	Not repairable
without R, Q, T	Must Not be returned.	Not repairable

● Export regulation-applicable character(Parts without the following character are not controlled by Export regulation.)

Character	Significance
+	Parts applicable to export regulations.

● Fault RANK characters (which provide reference for determining the recom-mended stock quantity)

All parts are assigned either A through E.

Character	Significance
A	Consumable parts or parts that will be replaced at short intervals.
B	Parts that may become faulty accidentally and have a relatively high failure rate.
C	Parts that have a sufficiently long MTBF, but are expected to have a relatively high failure rate.
D	Parts that have a sufficiently long MTBF, but are expected to become faulty.
E	Parts that are necessary for fault analysis, or parts that may be needed in case of unexpected accidents such as man-induced damage.

<The RANK guide>
The Fault RANK characters, Handling RANK characters, and Export regulation-applicable character are assigned in that order.
Thus, at least one character or up to three characters are assigned in the RANK column.

■ REF.NO.

REF. NO. is a parts number indicated in the Service Parts Exploded Views. For parts having different functions, they are clearly distinguished in the REMARKS and SERIAL NUMBER columns.

■ PART NUMBER

PART NUMBER is a code number that is unique to each part. An alphabetic letter at the right-most position of the code number has the following meaning.

○ For hardware
The alphabet denotes the version number of a part. If parts have different version numbers, they are upward-compatible.

○ For software
The alphabet denotes a difference in the specifications. Parts differing in the suffix are not compatible with each other. Although the version is indicated by a number, it is omitted.

■ PART NAME

PART NAME represents a general name of a part.

■ QTY.

○ QTY. denotes the quantity of parts used in each unit.

○ A parts with -S assigned to the end of the quantity represents a small part that is shipped in packs of 50. (Even if such a part is ordered in quantity of 1, a pack containing 50 pieces of that part is supplied.)

■ REMARKS

The REMARKS column indicates a unique name of a part or its relevant information of note.

■ SERIAL NUMBER

The units may contain different parts depending on their shipment control number. SERIAL NUMBER indicates the shipment control number to which the relevant parts are applicable. If the SERIAL NUMBER column is blank, the parts are applicable to all the relevant units. The shipment control number is represented by lower five digits of eight-digit number indicated on the rating indication label.

■ REFER TO

The "REFER TO" column shows the reference sections concerning the registered parts whose removal/installation procedures are set forth in the "Check, Replacement, and Adjustment" volume (MC).

As regards the parts whose information is set forth in the "Check, Replacement, and Adjustment" volume (MC), the associated information about screws, E-rings, and the like is not presented within parts illustrations.
To confirm the information about screws, E-rings, and the like, refer to the "Check, Replacement, and Adjustment" volume (MC).

■ Quantities of recommended spare parts

It is recommended as a rough guide to hold in stock a certain quantity of parts according to the rank (A, B, C, D, E) assigned to the parts,as follows. For periodically replaced parts,hold them in stock separately.
Adjust the stock quantity of service parts depending on the number of working units (N).
Quantity used in a single system : Q

○ $N = 1$
Rank A $= 1 + Q \times 0.3$
Rank C $= 1 + Q \times 0.05$
Rank D $= 1 + Q \times 0.02$

○ $2 \leqq N \leqq 10$
Rank A $= 2 + N \times Q \times 0.3$
Rank C $= 2 + N \times Q \times 0.05$
Rank D $= 2 + N \times Q \times 0.02$

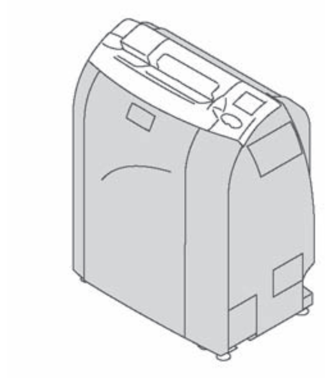
○ $11 \leqq N \leqq 300$
Rank A $= 3 + N \times Q \times 0.3$
Rank C $= 3 + N \times Q \times 0.05$
Rank D $= 2 + N \times Q \times 0.02$

■ Precautions to be Observed When Returning Parts in Need of Repair

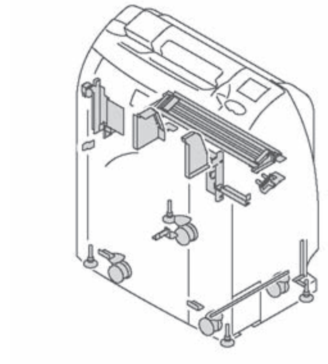
When returning a component in need of repair, pack it in the same manner as for the supplied substitute, using the substitute packing materials.
The use of different packing materials or packing methods may incur damage to packed component during transit.

INDEX

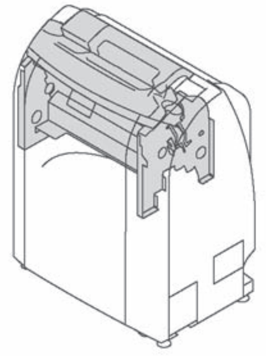
INDEX 01
● カバー
COVER



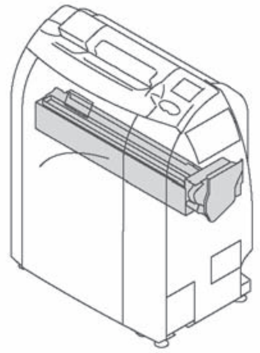
INDEX 02
● フレーム
FRAME



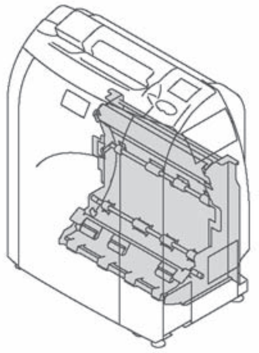
INDEX 03
● カセッテセット部
CASSETTE SET UNIT



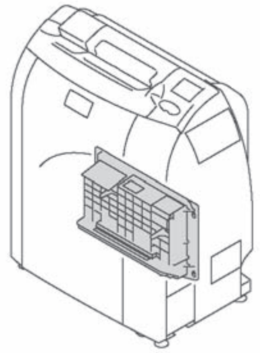
INDEX 04
● 消去部
ERASURE UNIT



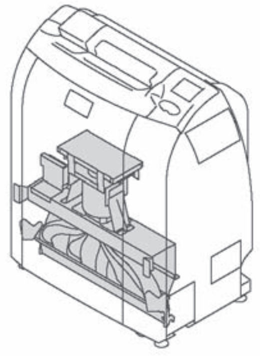
INDEX 05
● 幅寄搬送部
SIDE-POSITIONING CONVEYOR



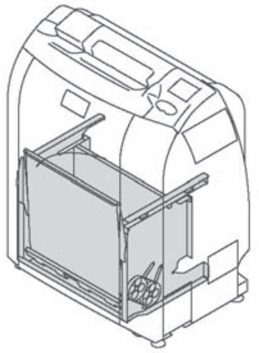
INDEX 06
● 光学部
SCANNING OPTICS UNIT



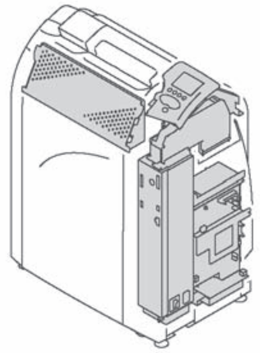
INDEX 07
● 集光部
LIGHT-COLLECTING UNIT



INDEX 08
● 副走査部
SUB SCANNNG UNIT



INDEX 09
● 制御部
CONTROLLER



INDEX 10
● ケーブル
CABLE

INDEX 11
● 回路図
CIRCUIT DIAGRAM

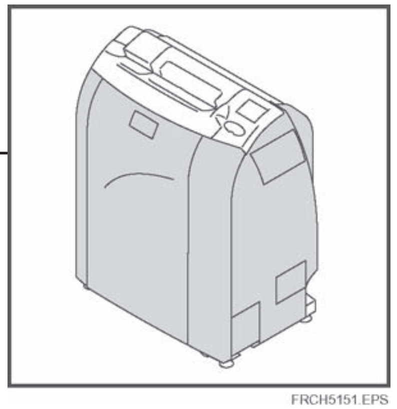
INDEX 12
●部品番号検索表
PARTS NOS. SEARCH TABLE

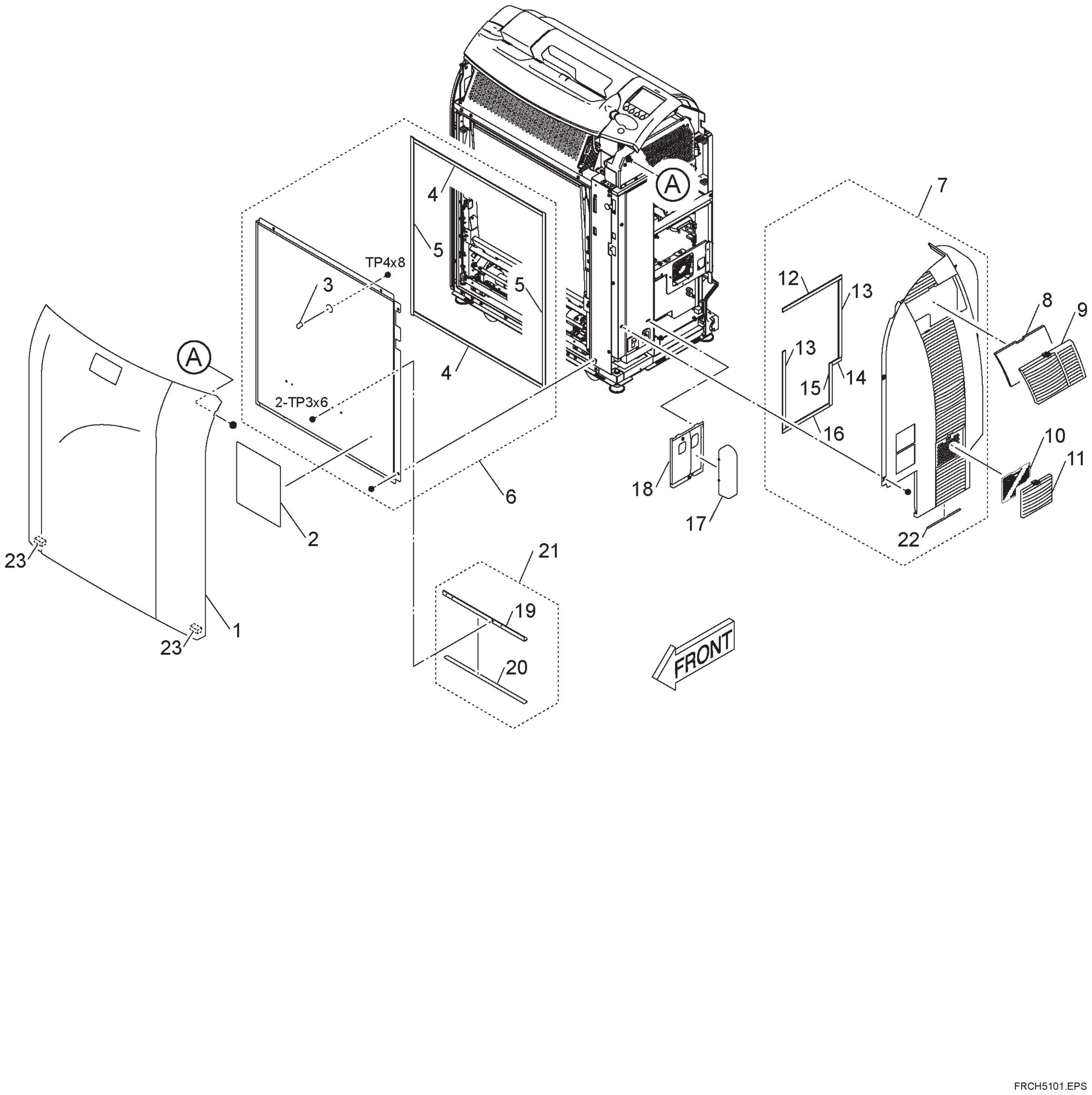
INDEX 13
● オプション
OPTION

INDEX 14
● 治具
JIG

INDEX 15
● 締結用および配線用のサービス部品一覧表
List of Service Parts for Securing and Wiring

01A カバー 1
COVER 1

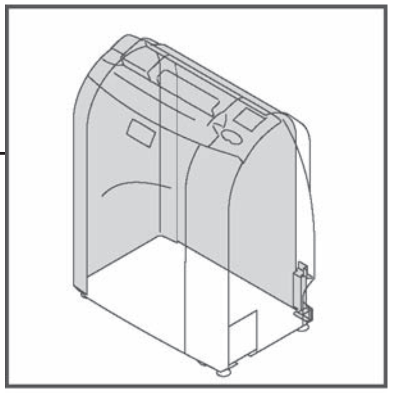




カバー 1
COVER 1 01A

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
E	1.1	350Y1874D	カバー	Cover	1	Except for USA		☞ {MC:3.1}
E	1.2	350Y2061D	カバー	Cover	1	For USA		☞ {MC:3.1}
E	1.3	350Y2080C	カバー	Cover	1	For PHILIPS		☞ {MC:3.1}
E	2	405N3178C	銘板	Label	1			☞ {MC:3.5}
D	3	343N0048	フック	Hook	1			☞ {MC:3.5}
D	4	382N1667	テープ	Tape	2			☞ {MC:3.5}
D	5	382N1670	テープ	Tape	2			☞ {MC:3.5}
E	6	345Y0318B	遮板	Light Protect Plate	1			☞ {MC:3.5}
E	7.1	350Y1925C	カバー	Cover	1	Except for USA		☞ {MC:3.2}
E	7.2	350Y2065B	カバー	Cover	1	For USA		☞ {MC:3.2}
A	8	376N0240B	メカニカルフィルタ	Mechanical Filter	1			☞ {MC:3.9}
D	9.1	345N1742E	ルーバー	Louver	1	Except for USA		☞ {MC:3.9}
D	9.2	345N1884A	ルーバー	Louver	1	For USA		☞ {MC:3.9}
D	10	376N0241B	メカニカルフィルタ	Mechanical Filter	1			☞ {MC:3.9}
D	11.1	345N1743D	ルーバー	Louver	1			☞ {MC:3.9}
D	11.2	345N1885A	ルーバー	Louver	1			☞ {MC:3.9}
D	12	382N1711B	テープ	Tape	1			☞ {MC:3.2}
D	13	382N1713A	テープ	Tape	2			☞ {MC:3.2}
D	14	382N1716	テープ	Tape	1			☞ {MC:3.2}
D	15	382N1712B	テープ	Tape	1			☞ {MC:3.2}
D	16	382N1715B	テープ	Tape	1			☞ {MC:3.2}
E	17.1	350N3085C	カバー	Cover	1	Except for USA		☞ {MC:4.6}
E	17.2	350N3318A	カバー	Cover	1	For USA		☞ {MC:4.6}
E	18.1	350N2974E	カバー	Cover	1	Except for USA		☞ {MC:4.6}
E	18.2	350N3309A	カバー	Cover	1	For USA		☞ {MC:4.6}
E	19	350N10768A	ブラケット	Bracket	1			☞ {MC:3.5}
D	20	386N1372	緩衝機材	Shock Absorber	1			☞ {MC:3.5}
E	21	356Y0616A	ブラケット	Bracket	1			☞ {MC:3.5}
D	22	386N1375	緩衝機材	Shock Absorber	1			☞ {MC:3.11}
D	23	386N1374	緩衝機材	Shock Absorber	2			☞ {MC:3.11}

01B カバー 2 COVER 2



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カバー 2
COVER 2
01B

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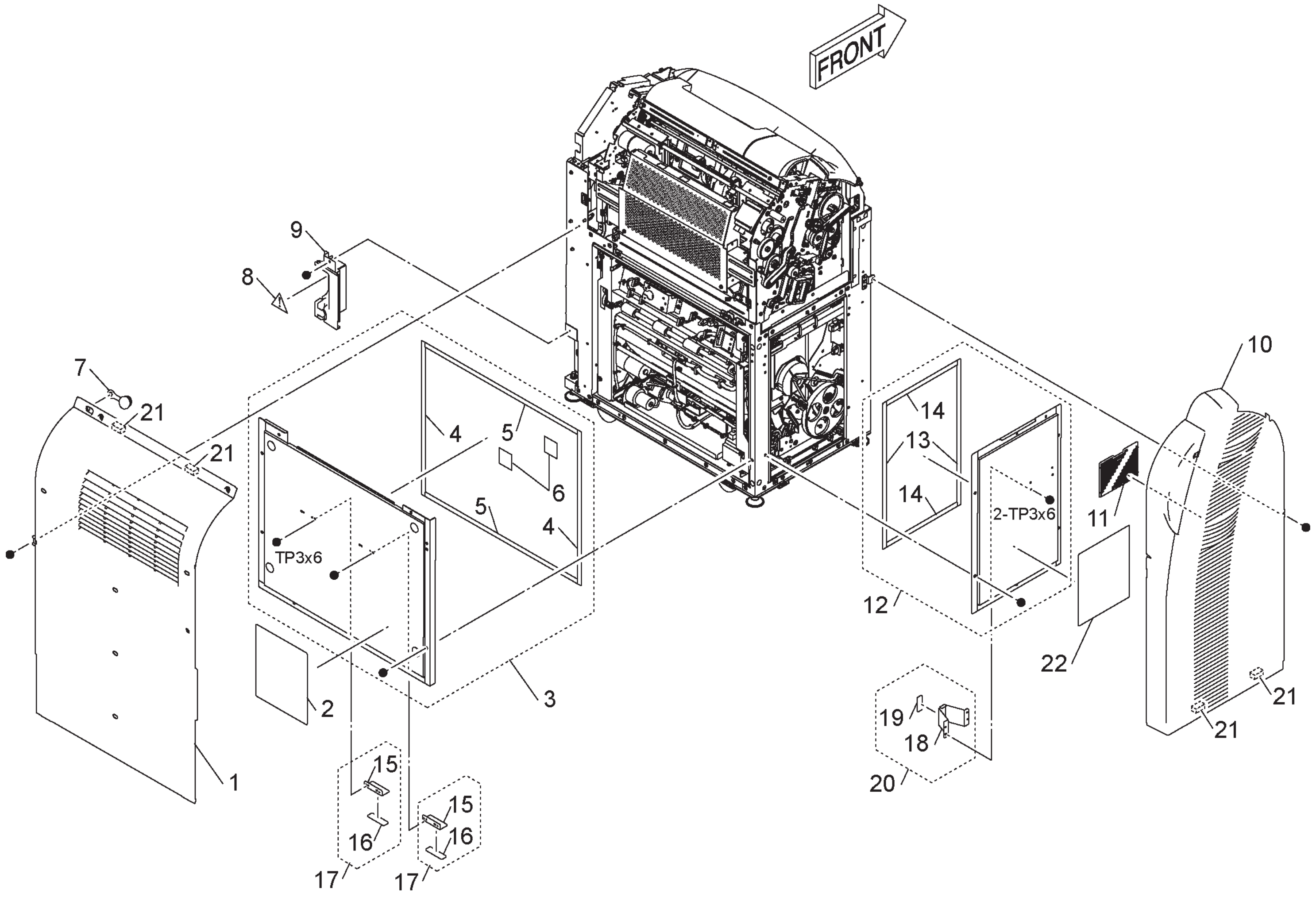
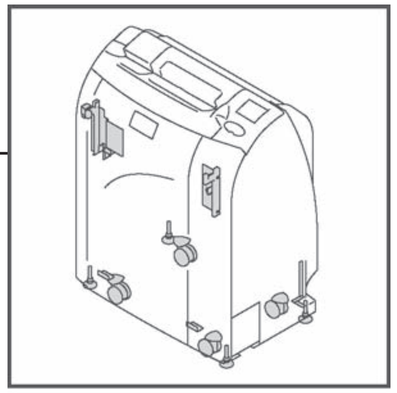
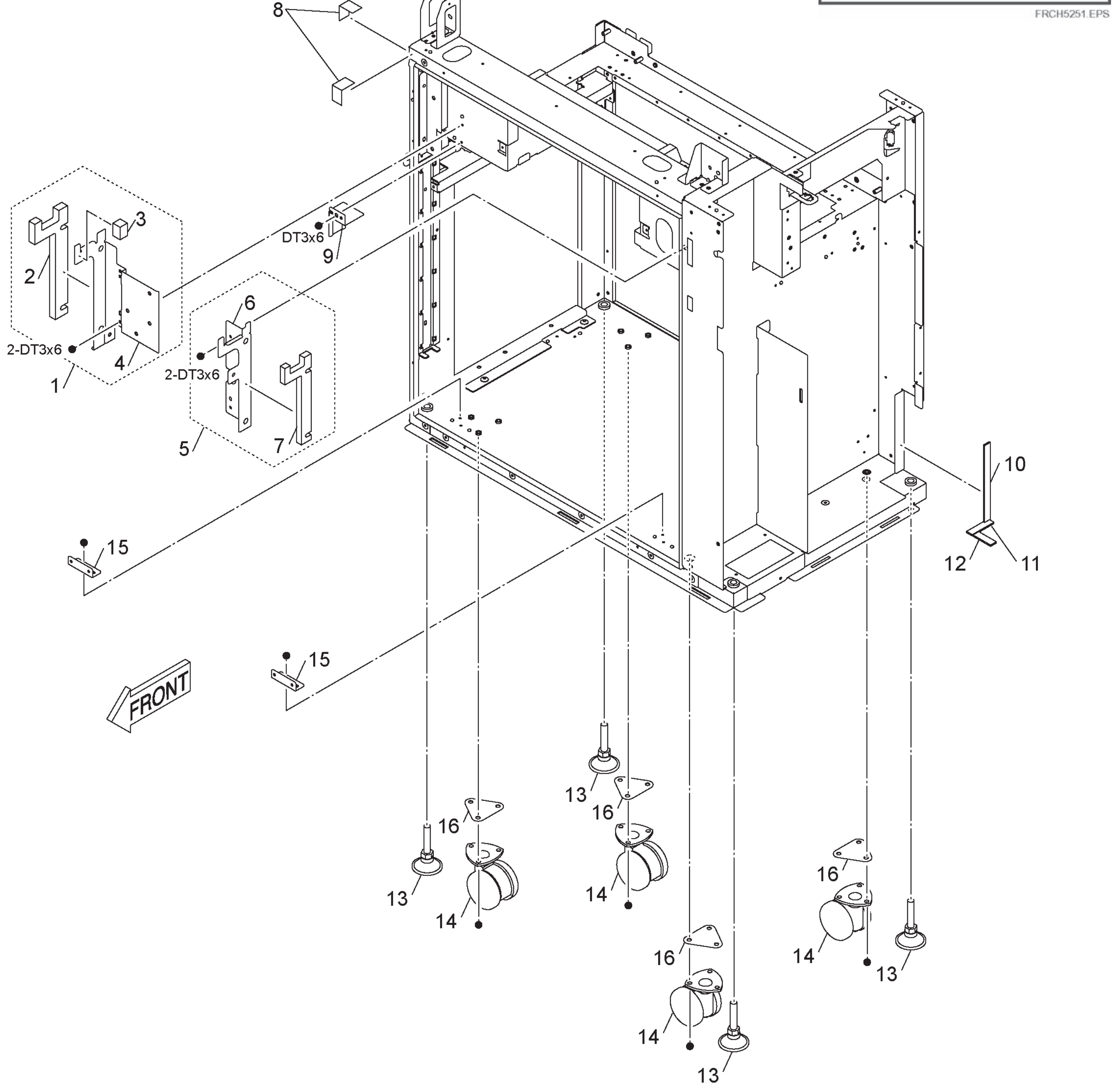
E	1.1	350Y1959B	カバー	Cover	1	Except for USA		☞ {MC:3.3}
E	1.2	350Y2067C	カバー	Cover	1	For USA		☞ {MC:3.3}
E	2	405N3178C	銘板	Label	1			☞ {MC:3.6}
E	3	345Y0319C	遮板	Light Protect Plate	1			☞ {MC:3.6}
D	4	382N1668	テープ	Tape	2			☞ {MC:3.6}
D	5	382N1667	テープ	Tape	2			☞ {MC:3.6}
D	6	382N1839	テープ	Tape	2			☞ {MC:3.6}
E	7.1	350N3235C	カバー	Cover	1	For USA		☞ {MC:3.3}
E	7.2	350N3310B	カバー	Cover	1	Except for USA		☞ {MC:3.3}
E	8	405N2505A	銘板	Label	1			☞ {MC:3.8}
E	9.1	350Y1809B	カバー	Cover	1	Except for USA		☞ {MC:3.8}
E	9.2	350Y2059A	カバー	Cover	1	For USA		☞ {MC:3.8}
E	10.1	350Y2082	カバー	Cover	1	Except for USA		☞ {MC:3.4}
E	10.2	350Y2083	カバー	Cover	1	For USA		☞ {MC:3.4}
D	11	376N0241B	メカニカルフィルタ	Mechanical Filter	1			☞ {MC:3.10}
E	12	345Y0320B	遮板	Light Protect Plate	1			☞ {MC:3.7}
D	13	382N1665	テープ	Tape	2			☞ {MC:3.7}
D	14	382N1666A	テープ	Tape	2			☞ {MC:3.7}
E	15	356N10769A	ブラケット	Bracket	2			☞ {MC:3.6}
D	16	386N1373	緩衝機材	Shock Absorber	2			☞ {MC:3.6}
E	17	356Y0617A	ブラケット	Bracket	2			☞ {MC:3.6}
E	18	356N10761A	ブラケット	Bracket	1			☞ {MC:3.7}
D	19	386N1367	緩衝機材	Shock Absorber	1			☞ {MC:3.7}
E	20	356Y0610A	ブラケット	Bracket	1			☞ {MC:3.7}
D	21	386N1374	緩衝機材	Shock Absorber	4			☞ {MC:3.11}
E	22	405N3178C	銘板	Label	1			☞ {MC:3.7}



FRCH5102.EPS

02A フレーム 1 FRAME 1


FRCH5251.EPS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DT3x6
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FRCH5201.EP

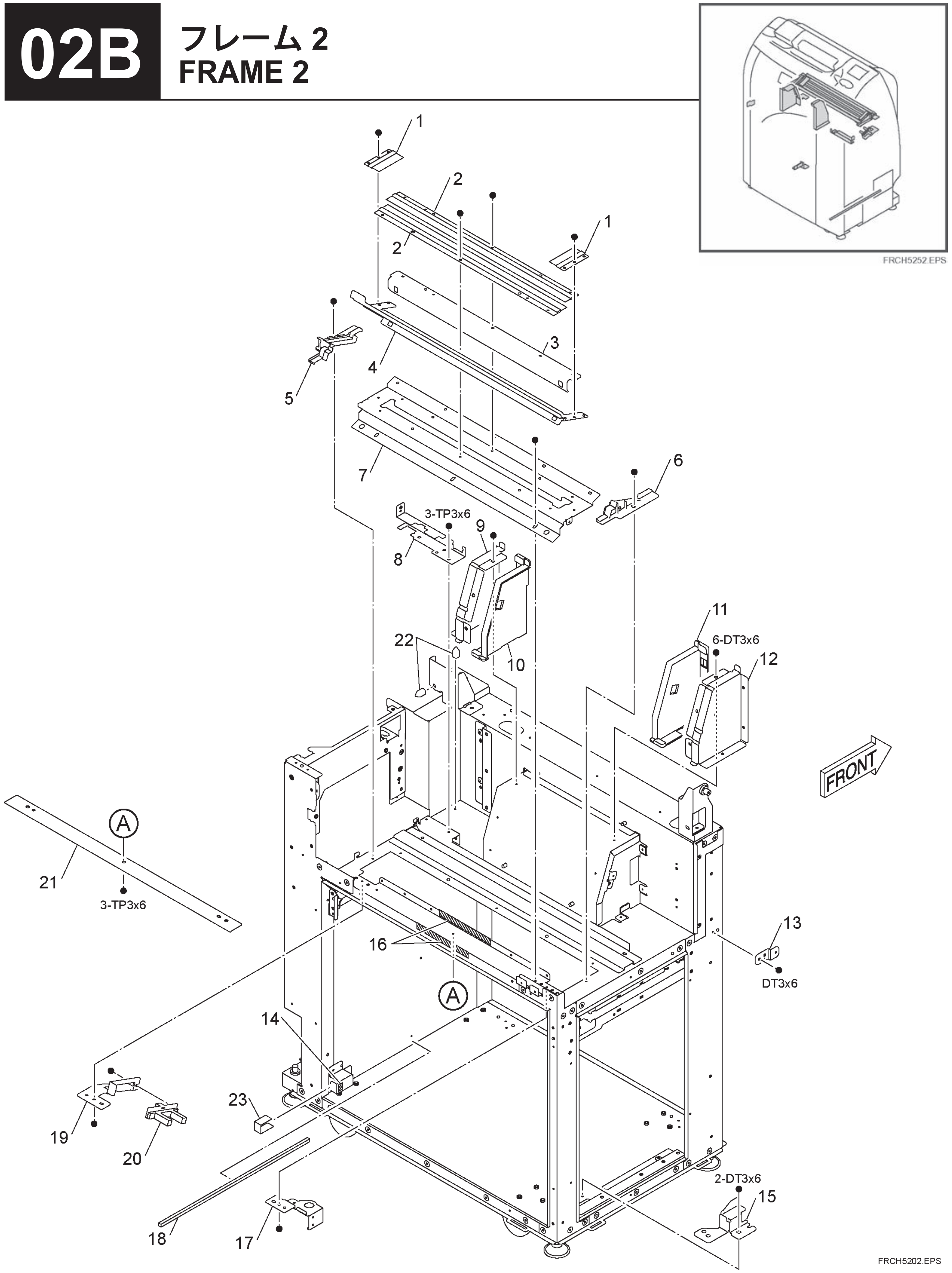
フレーム 1 FRAME 1 02A

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
E	1	356Y0459	ブラケット	Bracket	1			―
D	2	382N1745B	テープ	Tape	1			―
D	3	382N1747	テープ	Tape	1			―
E	4	356N10253B	ブラケット	Bracket	1			―
E	5	356Y0460	ブラケット	Bracket	1			―
E	6	356N10254B	ブラケット	Bracket	1			―
D	7	382N1746A	テープ	Tape	1			―
D	8	382N1820	テープ	Tape	2			―
E	9	356N10570C	ブラケット	Bracket	1			―
D	10	382N1717	テープ	Tape	1			―
D	11	382N1718A	テープ	Tape	1			―
D	12	382N1719	テープ	Tape	1			―
D	13	367N2069	脚	Adjuster Assembly	4			☞ {MC:4.9}
D	14	367S1109A	キャスタ	Caster	4			☞ {MC:4.9}
E	15	356N10182A	ブラケット	Bracket	2			―
D	16	347N2124	スペーサ	Spacer	4			☞ {MC:4.9}

02B フレーム 2 FRAME 2

FRCH5252.EPS

フレーム 2 FRAME 2 02B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3-TP3x6
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DT3x6
16
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2-DT3x6
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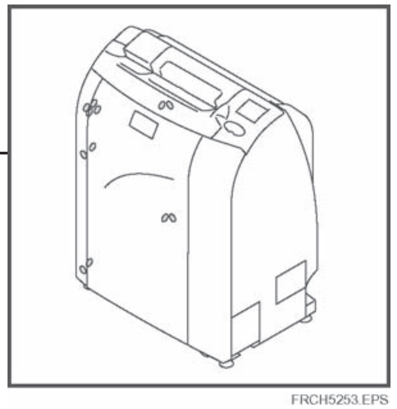
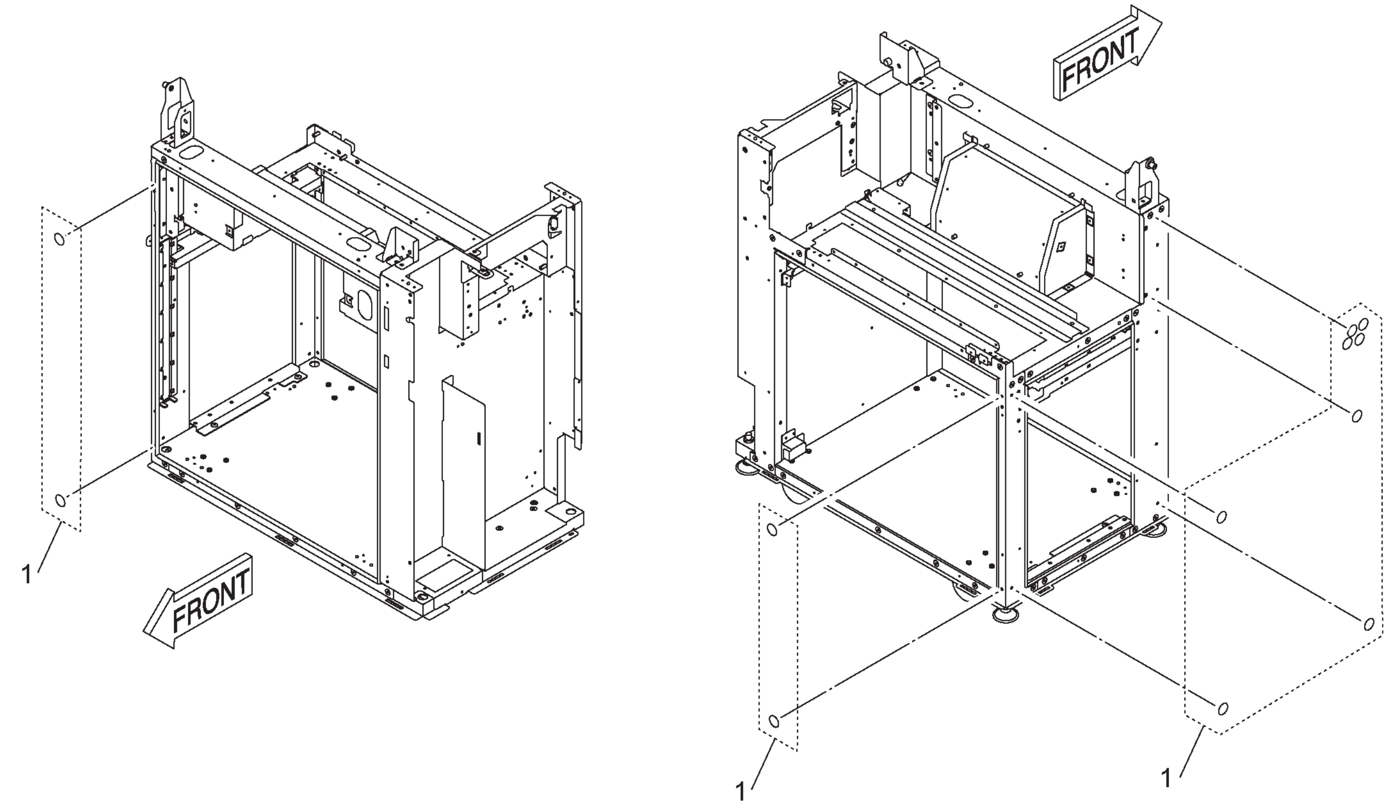
FRCH5202.EPS

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
D	1	387N0188	帯電防止材	Antistatic Brush	2			☞ {MC:4.7}
D	2	387N0187	帯電防止材	Antistatic Brush	2			☞ {MC:4.7}
D	3	363N2613C	ガイド板	Guide plate	1			☞ {MC:4.7}
D	4	363N2614C	ガイド板	Guide plate	1			☞ {MC:4.7}
E	5	362N0834E	受	Support	1			☞ {MC:4.7}
E	6	362N0835B	受	Support	1			☞ {MC:4.7}
E	7	362N0833B	受	Plate	1			☞ {MC:4.7}
E	8	345N1757B	仕切板	Bracket	1			–
E	9	350N3134B	カバー	Cover	1			–
D	10	375N0103B	パッキン	Packing	1			–
D	11	375N0104B	パッキン	Packing	1			–
E	12	350N3133B	カバー	Cover	1			–
E	13	356N10208A	ブラケット	Bracket	1			–
E	14	386N1292B	緩衝機材	Shock Absorber	1			–
E	15	362N0836F	受	Bracket	1			–
D	16	382N1864	テープ	Tape	2			–
E	17	356N9820E	ブラケット	Bracket	1			–
D	18	382N1819	スポンジテープ	Sponge Tape	1			–
E	19	356N9819D	ブラケット	Bracket	1			☞ {MC:4.8}
D	20	146N0016A	ホトインタラプタ	Photo Sensor	1	SG1		☞ {MC:4.8}
E	21	345N1799A	遮板	Light Protect Plate	1			–
E	22	319N4192D	軸	Shaft	2			–
D	23	384N0105A	こすり部材	Tape	1			–

02C フレーム 3 FRAME 3


FRCH5253.EPS

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
E	1	375N0099	シール	Seal	12			ー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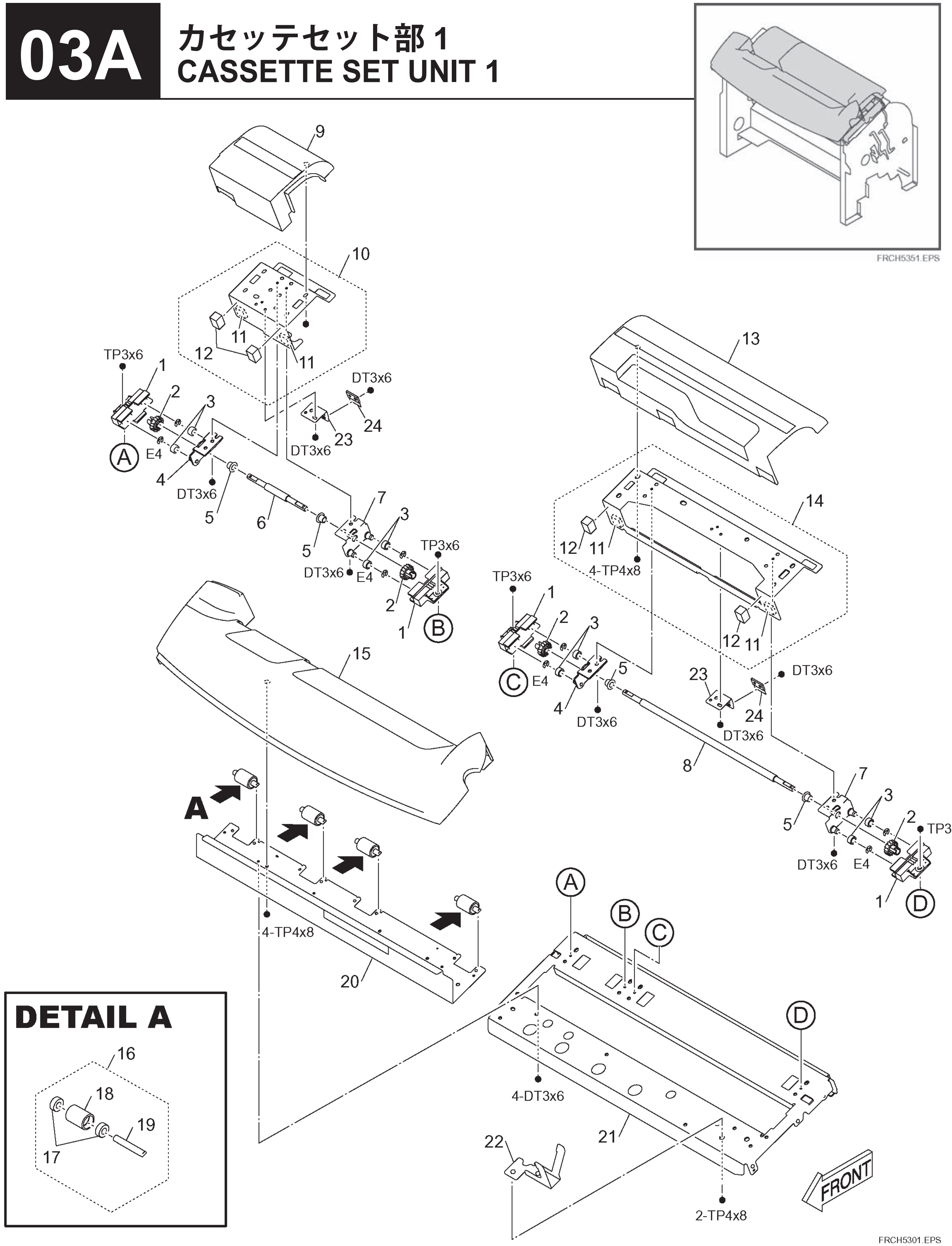
FRCH5203.EPS

03A カセッテセット部 1 CASSETTE SET UNIT 1


FRCH5351.EPS

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DT3x6
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DT3x6
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TP3x6
DT3x6
E4
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TP3x6
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E4
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DT3x6
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DT3x6
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DT3x6
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TP3x6
DT3x6
E4
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FRONT
DETAIL A
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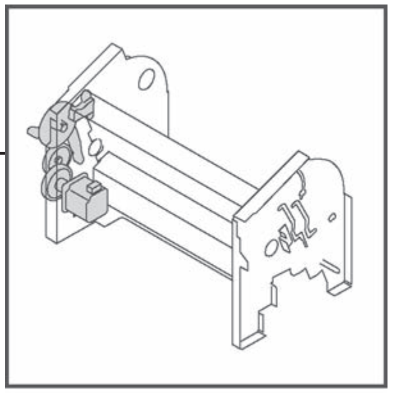
FRCH5301.EPS

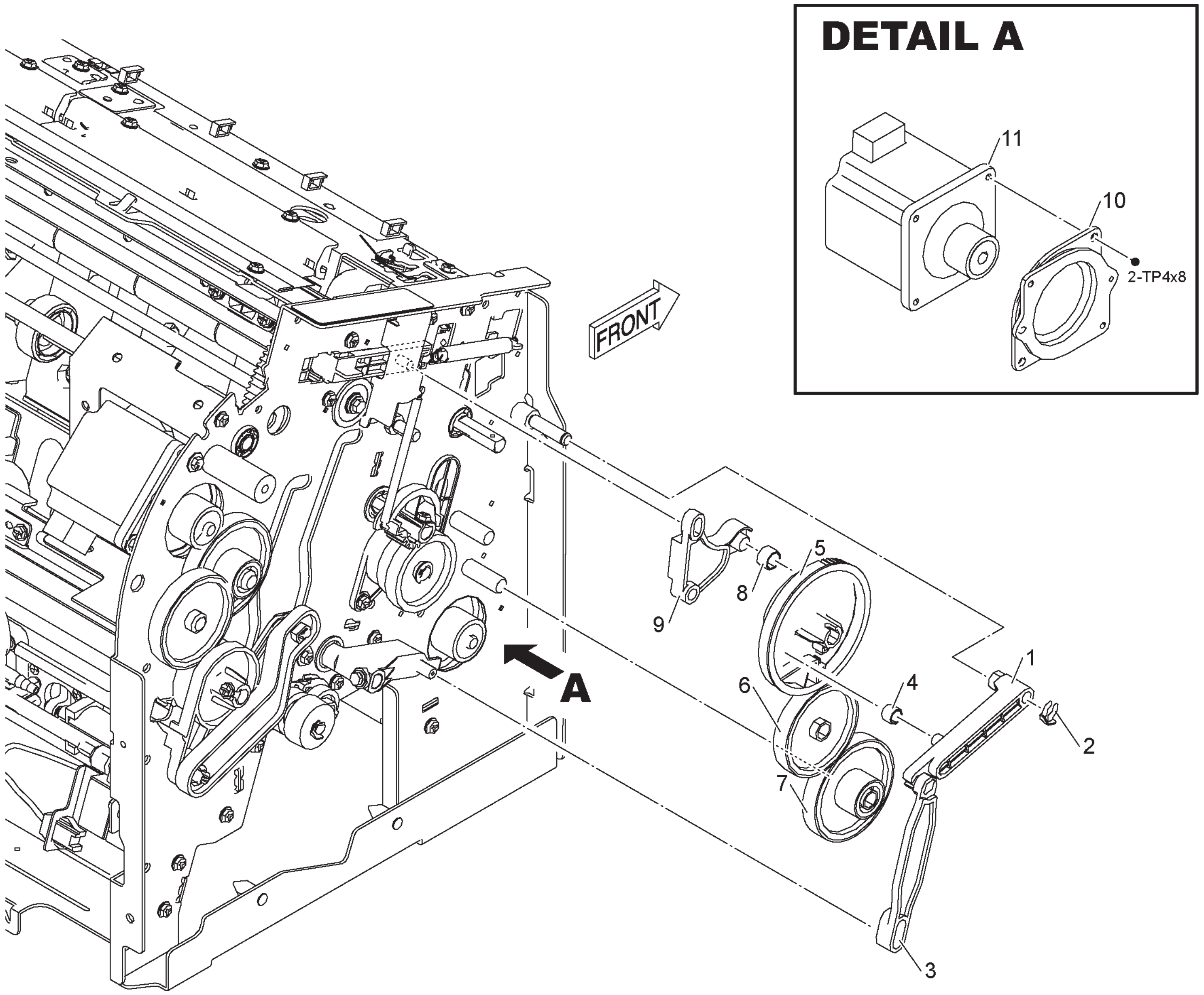
カセッテセット部 1
CASSETTE SET UNIT 1 03A

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
D	1	327N6101401D	ラック	Guide	4			☞ {MC:5.2}
D	2	327N1101607B	平歯車	Spur Gear	4			☞ {MC:5.2}
D	3	322N1036B	すべり軸受	Plain Bearing	8			☞ {MC:5.2}
E	4	356Y0407A	ブラケット	Bracket	2			☞ {MC:5.2}
D	5	322SY066	すべり軸受	Plain Bearing	4			☞ {MC:5.2}
E	6	319N4168C	軸	Shaft	1			☞ {MC:5.2}
E	7	356Y0406B	ブラケット	Bracket	2			☞ {MC:5.2}
E	8	319N4146C	軸	Shaft	1			☞ {MC:5.2}
E	9.1	350Y1957A	カバー	Cover	1	For inch Cassete		☞ {MC:5.2}
E	9.2	350Y1958A	カバー	Cover	1	For metric Cassete		☞ {MC:5.2}
E	10	356Y0458A	ブラケット	Bracket	1			☞ {MC:5.2}
D	11	386N1266	緩衝機材	Shock Absorber	4			☞ {MC:5.2}
D	12	382N1747	テープ	Tape	4			☞ {MC:5.2}
E	13.1	350Y1953A	カバー	Cover	1	For inch Cassete		☞ {MC:5.2}
E	13.2	350Y1954A	カバー	Cover	1	For metric Cassete		☞ {MC:5.2}
E	14	356Y0457A	ブラケット	Bracket	1			☞ {MC:5.2}
E	15	350Y1951B	カバー	Cover	1			☞ {MC:5.2}
D	16	334Y2247	樹脂ローラ	Resin Roller	4			☞ {MC:5.2}
D	17	322NB006	ころがり軸受	Ball Bearing	2			☞ {MC:5.2}
D	18	334N2390D	樹脂ローラ	Resin Roller	1			☞ {MC:5.2}
D	19	319N4091B	軸	Shaft	1			☞ {MC:5.2}
E	20	346N1254D	補助板	Plate Support	1			☞ {MC:5.2}
E	21	353Y0073F	シャーシ	Chassis	1			☞ {MC:5.2}
E	22	356N10790A	ブラケット	Bracket	1			☞ {MC:5.2}
E	23	356N10111	ブラケット	Bracket	2			☞ {MC:5.2}
D	24	387N0138C	帯電防止材	Antistatic Brush	2			☞ {MC:5.2}

03B カセッテセット部 2
CASSETTE SET UNIT 2



FRCH5353.EPS

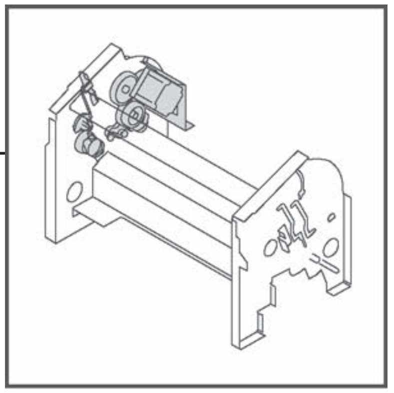


FRCH5303.EPS

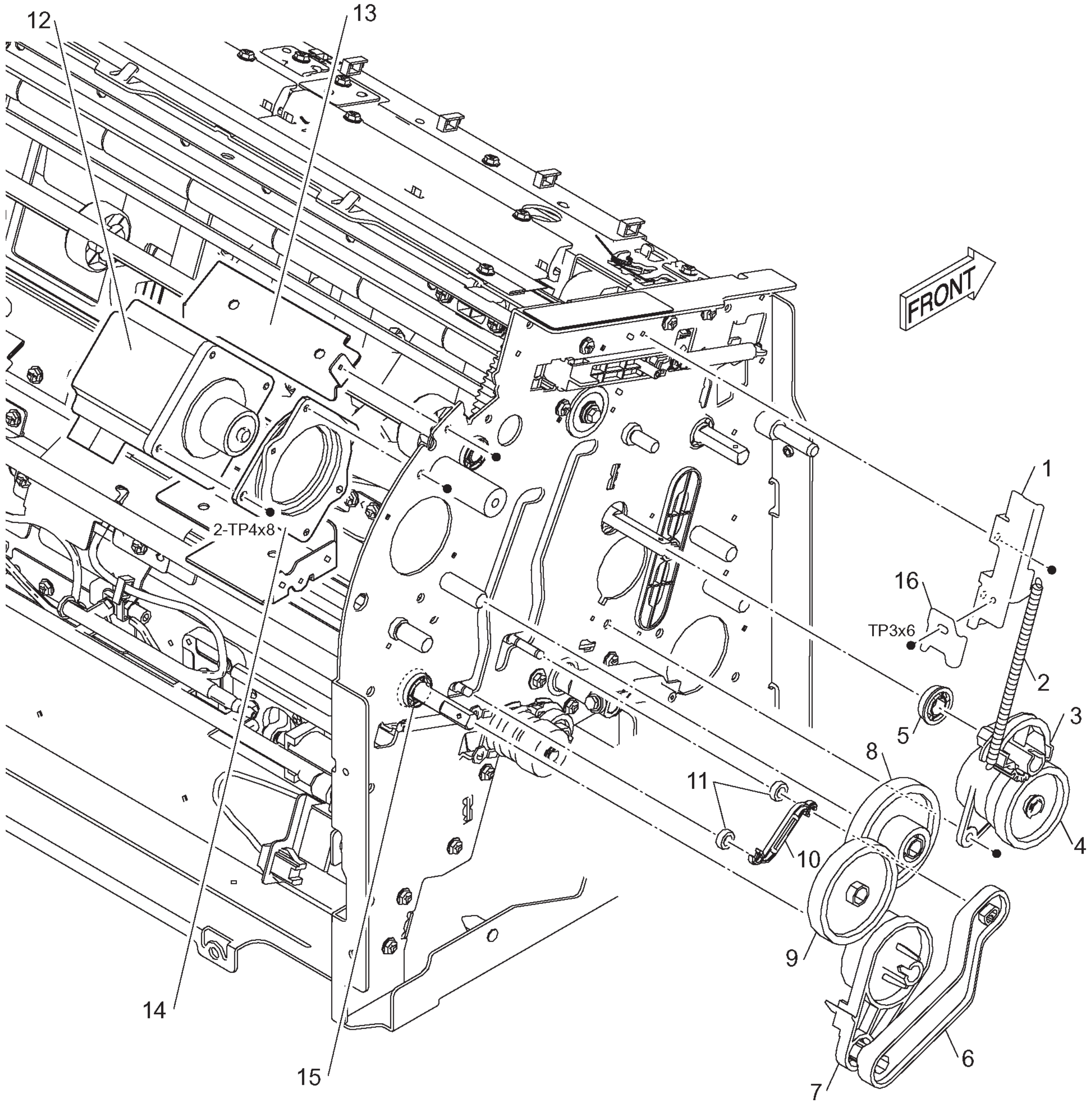
03B カセッテセット部 2
CASSETTE SET UNIT 2

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
E	1	341N1134C	アーム	Arm	1			☞ {MC:5.4}
D	2	315S0050	止め輪	Snap Ring	1			☞ {MC:5.4}
E	3	341N1135B	アーム	Arm	1			☞ {MC:5.4}
D	4	322SY094	すべり軸受	Plain Bearing	1			☞ {MC:5.4}
D	5	329N0168B	カム	Cam	1			☞ {MC:5.6}
D	6	327N0194	平歯車	Spur Gear	1			☞ {MC:5.6}
D	7	327N0193A	平歯車	Spur Gear	1			☞ {MC:5.6}
D	8	322SY092	すべり軸受	Plain Bearing	1			☞ {MC:5.6}
E	9	341N1054C	アーム	Arm	1			☞ {MC:5.25}
E	10	386N1307A	防振ゴム	Rubber Vibration Isolator	1			☞ {MC:5.5}
D	11	118SX213	ステッピングモータ	Stepping Motor	1	MA1, STP-59D3002		☞ {MC:5.5}

03C カセッテセット部 3
CASSETTE SET UNIT 3



FRCH5354.EPS

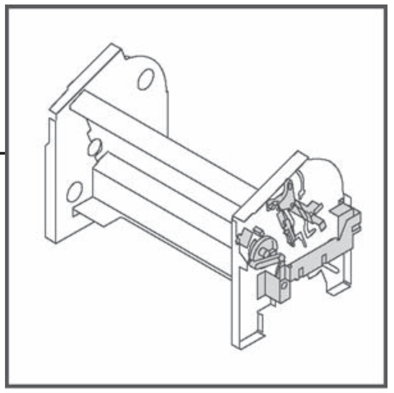


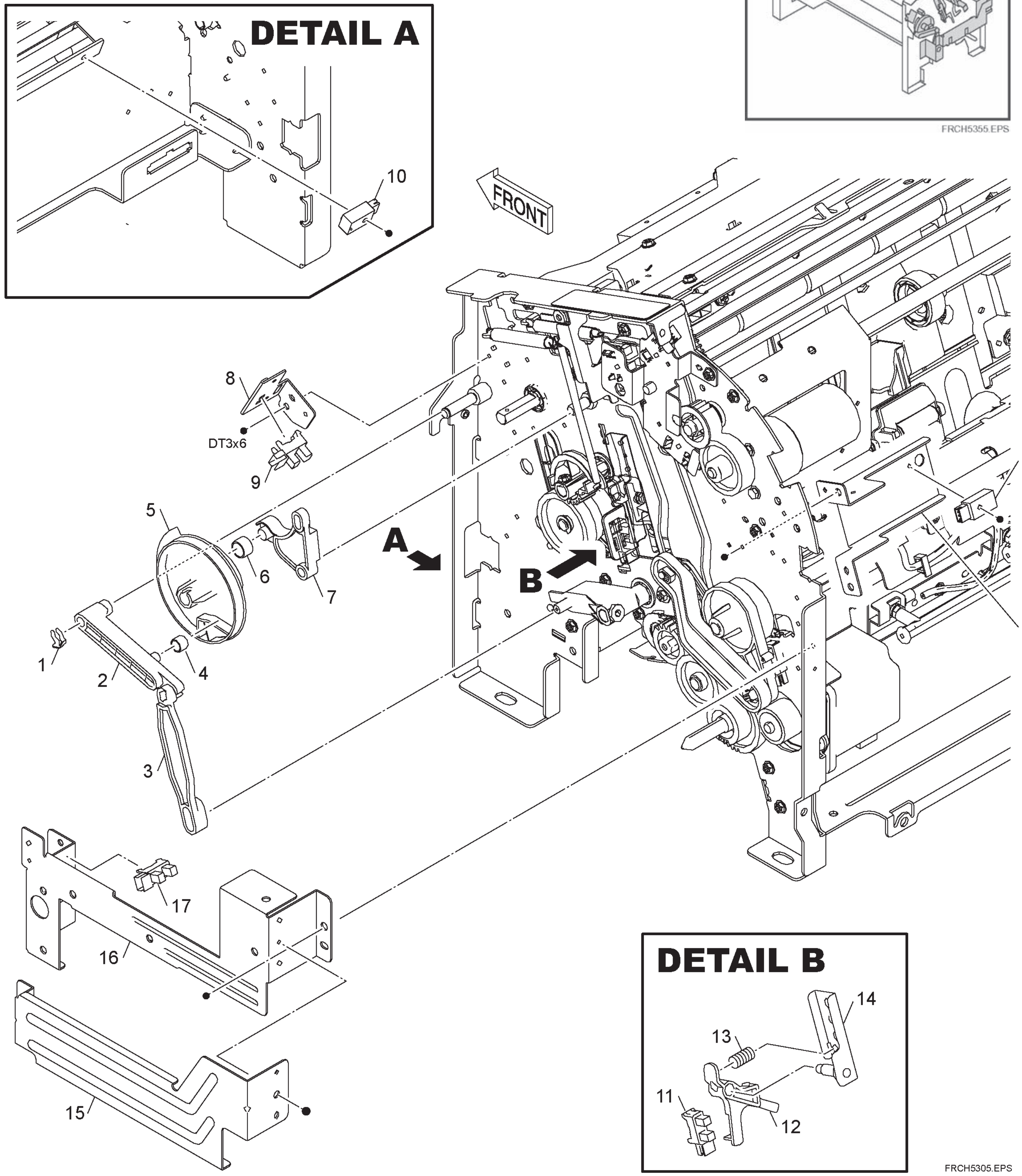
FRCH5304.EPS

カセッテセット部 3
CASSETTE SET UNIT 3
03C

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
E	1	356N9816C	ブラケット	Bracket	1			☞ {MC:5.22}
D	2	388N2562A	引張りコイルバネ	Extension Spring	1	L ≒ 56mm		☞ {MC:5.18}
D	3	327N0209D	平歯車	Spur Gear	1			☞ {MC:5.82}
A	4	386N1304A	ショックアブソーバ	Shock Absorber	1			☞ {MC:5.11}
D	5	322SY251	すべり軸受	Plain Bearing	1			☞ {MC:5.82}
E	6	341N0937B	アーム	Arm	1			☞ {MC:5.31}
D	7	327N1103610D	平歯車	Spur Gear	1			☞ {MC:5.31}
D	8	327N0193A	平歯車	Spur Gear	1			☞ {MC:5.31}
D	9	327N0194	平歯車	Spur Gear	1			☞ {MC:5.31}
D	10	322N0037D	すべり軸受	Plain Bearing	1			☞ {MC:5.69}
D	11	322SP201	ころがり軸受	Ball Bearing	2			☞ {MC:5.69}
D	12	118SX213	ステッピングモータ	Stepping Motor	1	MA3, STP-59D3002		☞ {MC:5.33}
E	13	356N9814B	ブラケット	Bracket	1			☞ {MC:5.34}
E	14	386N1307A	防振ゴム	Rubber Vibration Isolator	1			☞ {MC:5.33}
E	15	322SY251	すべり軸受	Plain Bearing	1			☞ {MC:5.70}
E	16	332N0640	ストッパ	Stopper	1			☞ {MC:5.22}

03D カセッテセット部 4
CASSETTE SET UNIT 4


FRCH5355.EPS

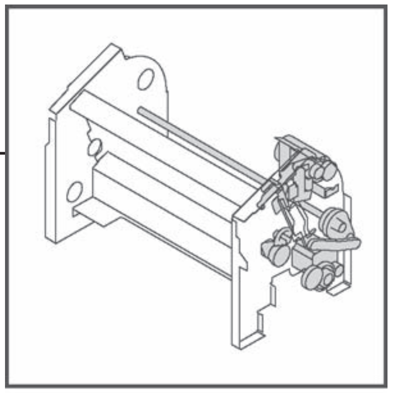


FRCH5305.EPS

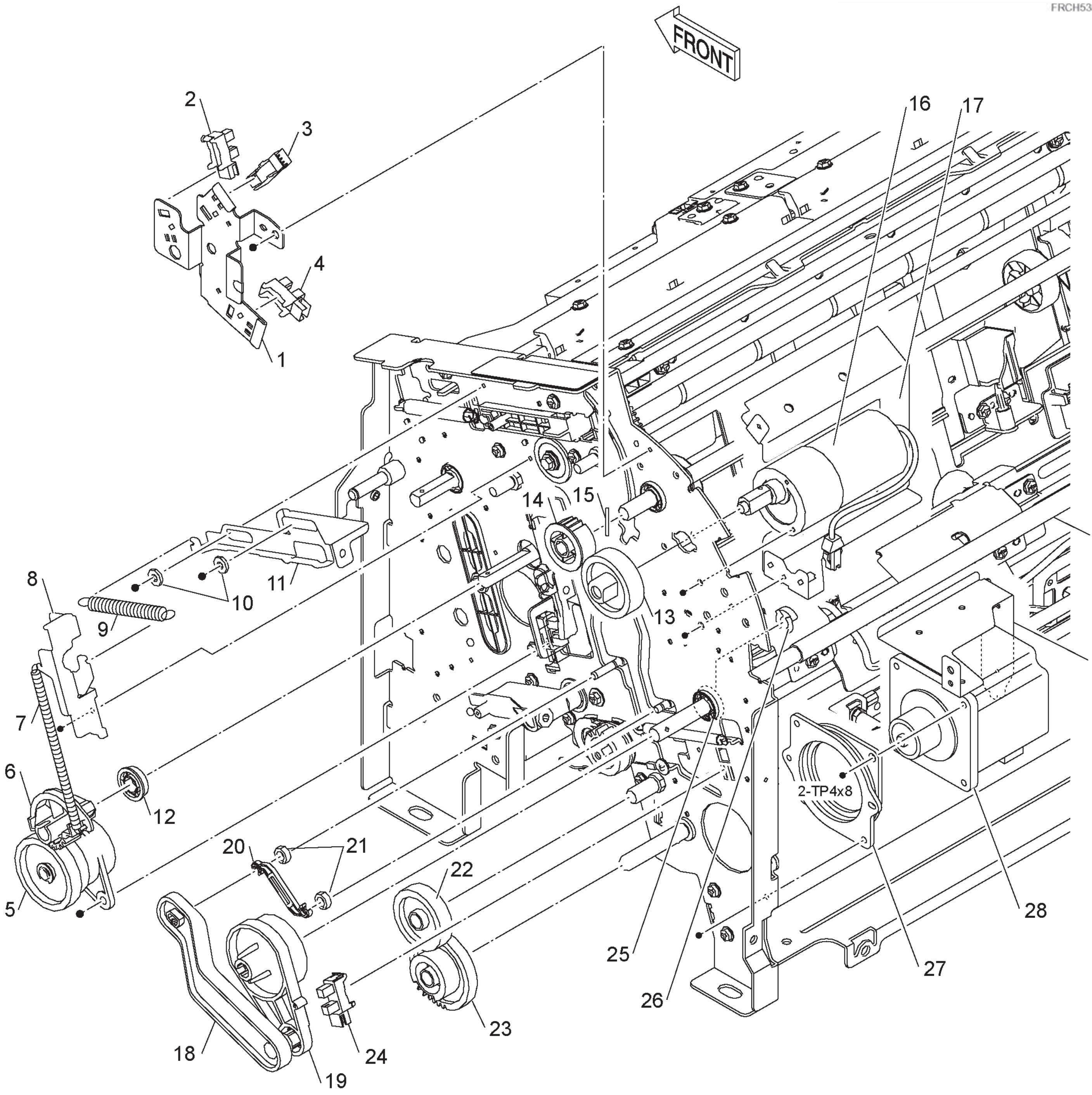
03D カセッテセット部 4
CASSETTE SET UNIT 4

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
D	1	315S0050	止め輪	Snap Ring	1			☞ {MC:5.9}
E	2	341N1134C	アーム	Arm	1			☞ {MC:5.9}
E	3	341N1135B	アーム	Arm	1			☞ {MC:5.9}
D	4	322SY094	すべり軸受	Plain Bearing	1			☞ {MC:5.9}
D	5	329N0169C	カム	Cam	1			☞ {MC:5.10}
D	6	322SY092	すべり軸受	Plain Bearing	1			☞ {MC:5.10}
E	7	341N1131C	アーム	Arm	1			☞ {MC:5.25}
E	8	356N9685A	ブラケット	Bracket	1			☞ {MC:5.61}
D	9	146S0029A	ホトインタラプタ	Photo Sensor	1	SA7		☞ {MC:5.61}
D	10	146S0083	ホトインタラプタ	Photo Sensor	1	SA4		☞ {MC:5.45}
D	11	146S0029A	ホトインタラプタ	Photo Sensor	1	SA1		☞ {MC:5.58}
E	12	341N1139A	アーム	Arm	1			☞ {MC:5.59}
D	13	388N1216	圧縮コイルバネ	Compression Coil Spring	1	L ≒ 14mm		☞ {MC:5.59}
E	14	356Y0353A	ブラケット	Bracket	1			☞ {MC:5.59}
E	15	356N10108A	ブラケット	Bracket	1			☞ {MC:5.7}
E	16	356N9811B	ブラケット	Bracket	1			☞ {MC:5.7}
D	17	146S0029A	ホトインタラプタ	Photo Sensor	1	SA3		☞ {MC:5.8}
D	18	146S0082	ホトインタラプタ	Photo Sensor	1	SA4		☞ {MC:5.44}
E	19	356N9808A	ブラケット	Bracket	1			☞ {MC:5.44}

03E カセッテセット部 5
CASSETTE SET UNIT 5



FRCH5356.EPS

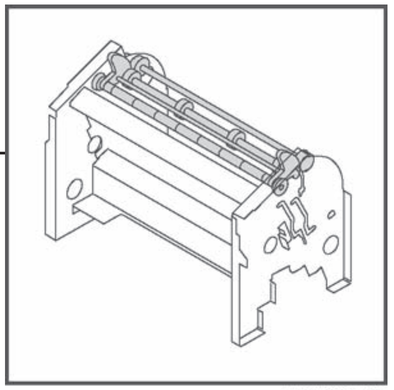


FRCH5306.EPS

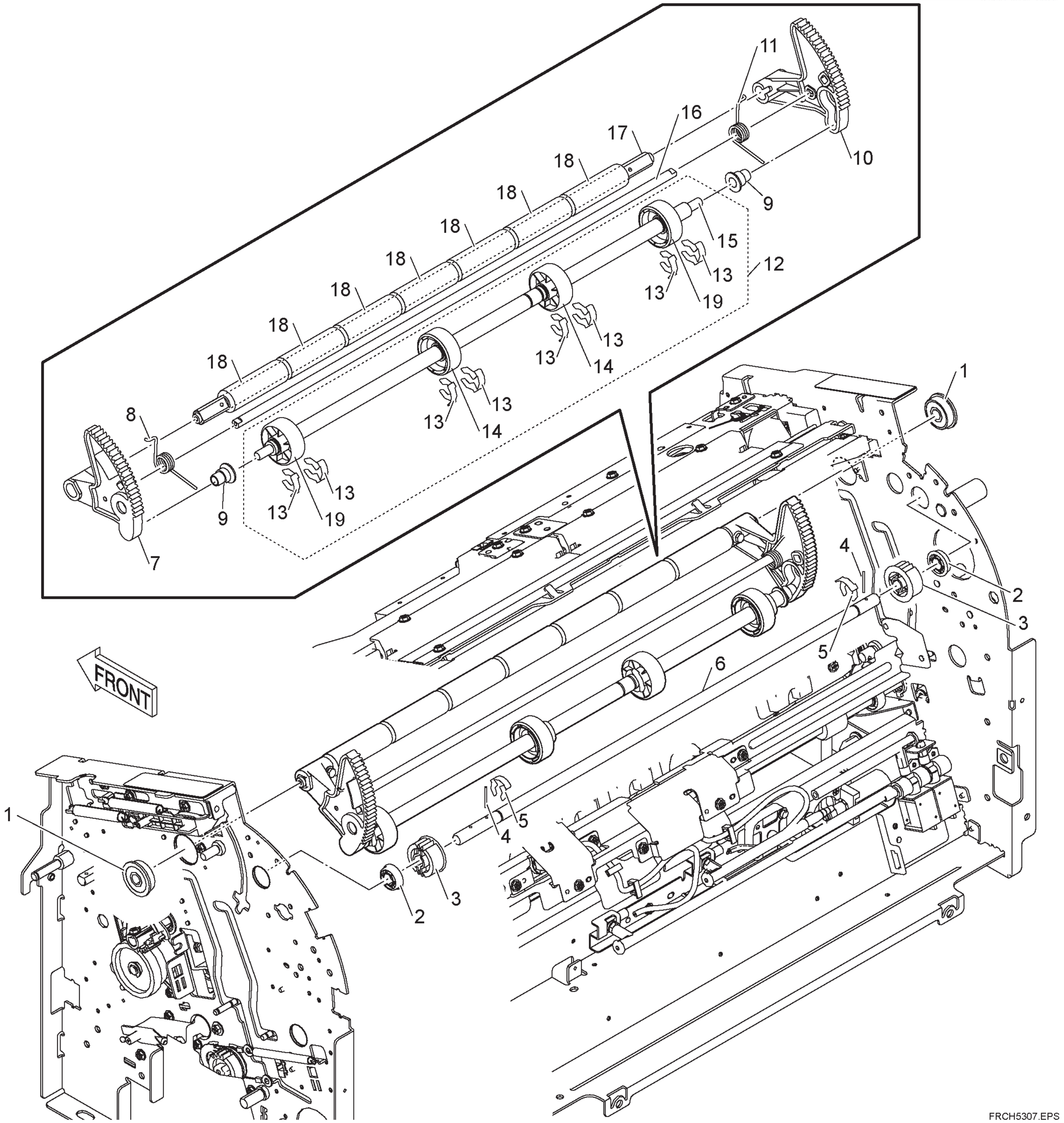
カセッテセット部 5
CASSETTE SET UNIT 5
03E

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
E	1	356N9680B	ブラケット	Bracket	1			☞ {MC:5.20}
D	2	146S0029A	ホトインタラプタ	Photo Sensor	1	SA10		☞ {MC:5.20}
D	3	146S0029A	ホトインタラプタ	Photo Sensor	1	SA8		☞ {MC:5.20}
D	4	146S0029A	ホトインタラプタ	Photo Sensor	1	SA12		☞ {MC:5.20}
A	5	386N1303A	ショックアブソーバ	Shock Absorber	1			☞ {MC:5.12}
D	6	327N0209D	平歯車	Spur Gear	1			☞ {MC:5.80}
D	7	388N2615A	引張りコイルバネ	Extension Spring	1	L ≒ 72mm		☞ {MC:5.19}
E	8	356N9815A	ブラケット	Bracket	1			☞ {MC:5.21}
D	9	388N2563A	引張りコイルバネ	Extension Spring	1	L ≒ 38mm		☞ {MC:5.21}
D	10	335N0095B	フランジ	Flange	2			☞ {MC:5.24}
E	11	341N1167	アーム	Arm	1			☞ {MC:5.24}
D	12	322SY251	すべり軸受	Plain Bearing	1			☞ {MC:5.80}
D	13	327N1103208C	平歯車	Spur Gear	1			☞ {MC:5.23}
D	14	327N1102202C	平歯車	Spur Gear	1			☞ {MC:5.23}
E	15	310S7002016	平行ピン	Straight Pin	1			☞ {MC:5.23}
D	16	118YX268A	モータ	Motor	1	MA2, RB-35CM-FSF23		☞ {MC:5.30}
E	17	356N10106A	ブラケット	Bracket	1			☞ {MC:5.29}
E	18	341N0937B	アーム	Arm	1			☞ {MC:5.32}
D	19	327N1103610D	平歯車	Spur Gear	1			☞ {MC:5.32}
D	20	322N0037D	すべり軸受	Plain Bearing	1			☞ {MC:5.69}
D	21	322SP201	ころがり軸受	Ball Bearing	2			☞ {MC:5.69}
D	22	327N1122501B	平歯車	Spur Gear	1			☞ {MC:5.54}
D	23	327N0210B	平歯車	Spur Gear	1			☞ {MC:5.54}
D	24	146S0029A	ホトインタラプタ	Photo Sensor	1	SA6		☞ {MC:5.60}
D	25	322SY251	すべり軸受	Plain Bearing	1			☞ {MC:5.70}
D	26	315S0051	止め輪	Snap Ring	1			☞ {MC:5.70}
E	27	386N1307A	防振ゴム	Rubber Vibration Isolator	1			☞ {MC:5.52}
D	28	118SX213	ステッピングモータ	Stepping Motor	1	MA4, STP-59D3002		☞ {MC:5.52}
E	29	356N10107A	ブラケット	Bracket	1			☞ {MC:5.53}
E	30	319N4113B	軸	Shaft	1			☞ {MC:5.70}

03F カセッテセット部 6
CASSETTE SET UNIT 6



FRCH5357.EPS

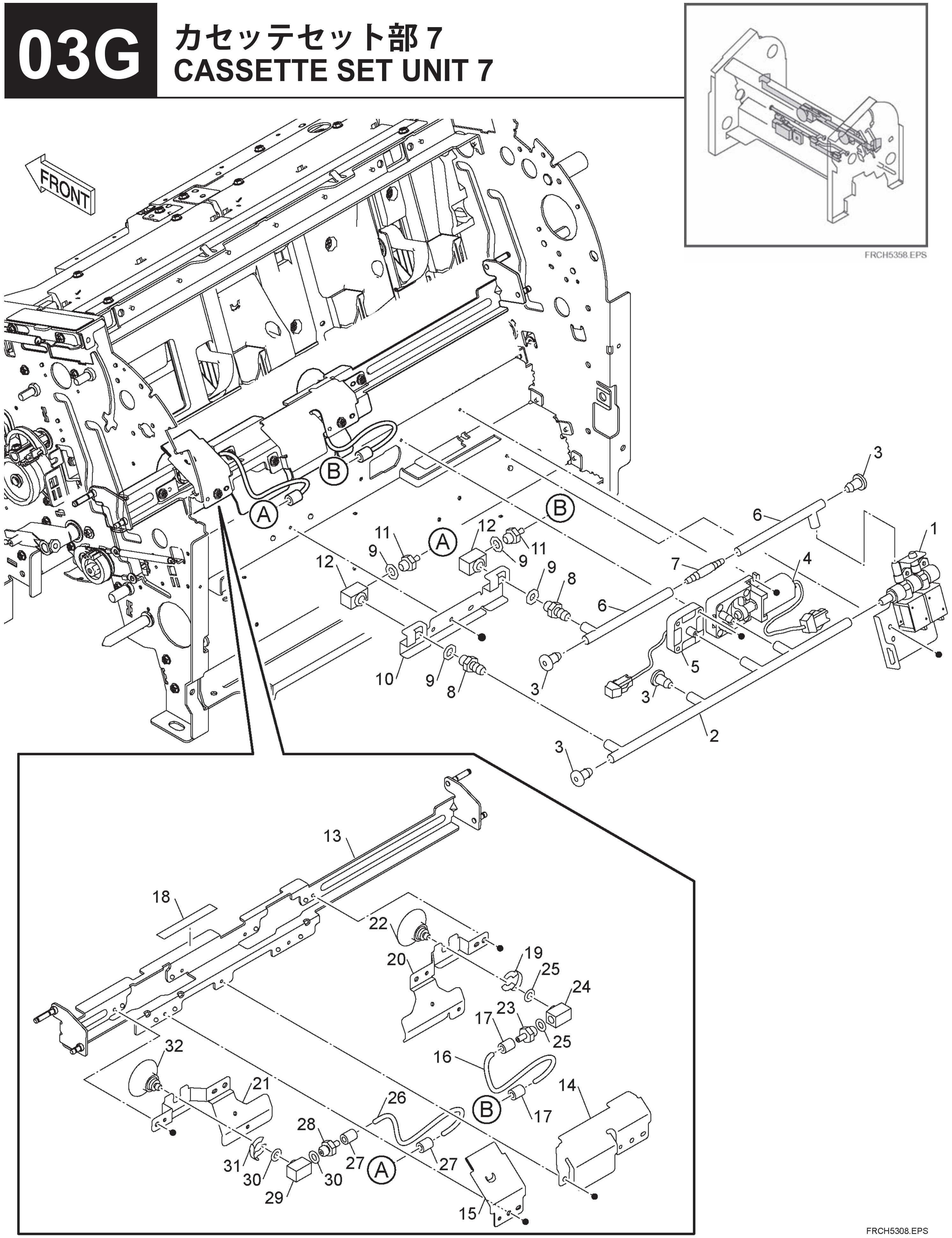


FRCH5307.EPS

カセッテセット部 6
CASSETTE SET UNIT 6
03F

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
D	1	322SB040	ころがり軸受	Ball Bearing	2			☞ {MC:5.36}
D	2	322SY251	すべり軸受	Plain Bearing	2			☞ {MC:5.35}
D	3	327N1102202C	平歯車	Spur Gear	2			☞ {MC:5.35}
E	4	310S7002016	平行ピン	Pin	2			☞ {MC:5.35}
D	5	315S0051	止め輪	Snap Ring	2			☞ {MC:5.35}
E	6	319N4088B	軸	Shaft	1			☞ {MC:5.35}
E	7	341N1132C	アーム	Arm	1			☞ {MC:5.36}
D	8	388N3102A	ねじりコイルバネ	Torsion Coil Spring	1			☞ {MC:5.36}
D	9	322N2004A	すべり軸受	Plain Bearing	2			☞ {MC:5.37}
E	10	341N1133B	アーム	Arm	1			☞ {MC:5.36}
D	11	388N3103A	ねじりコイルバネ	Torsion Coil Spring	1			☞ {MC:5.36}
D	12	334Y2249A	樹脂ローラ	Resin Roller	1			☞ {MC:5.37}
D	13	315N0011	止め輪	Snap Ring	8			☞ {MC:5.37}
D	14	334N2391C	樹脂ローラ	Resin Roller	2			☞ {MC:5.37}
E	15	319N4112C	軸	Shaft	1			☞ {MC:5.37}
E	16	313N1230A	ステー	Stay	1			☞ {MC:5.36}
E	17	319N4087A	軸	Shaft	1			☞ {MC:5.36}
D	18	334N2388C	樹脂ローラ	Resin Roller	7			☞ {MC:5.36}
D	19	334N2393	樹脂ローラ	Resin Roller	2			☞ {MC:5.37}

03G カセッテセット部 7
CASSETTE SET UNIT 7



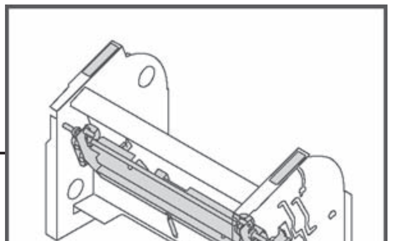
FRCH5358.EPS

FRCH5308.EPS

03G カセッテセット部 7
CASSETTE SET UNIT 7

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
D	1	134Y0077A	電磁バルブ	Solenoid Valve	1	SVA1, SVA2		☞ {MC:5.40}
D	2	369N0275B	管	Hose	1			☞ {MC:5.38}
D	3	317N5011B	栓	Plug	4			☞ {MC:5.38}
A	4	133Y2034C	電動ポンプ	Pump	1	PA1, CM-15-24		☞ {MC:5.41}
D	5	128Y0331	スイッチ	Switch	1	SA5		☞ {MC:5.42}
D	6	369N0288A	管	Hose	2			☞ {MC:5.38}
D	7	372S0280	管継手	Joint	1			☞ {MC:5.38}
D	8	372S0050	管継手	Joint	2			☞ {MC:5.39}
D	9	375S0040	パッキン	Packing	4			☞ {MC:5.39}
E	10	356N9876A	ブラケット	Bracket	1			☞ {MC:5.39}
D	11	372S0053	管継手	Joint	2			☞ {MC:5.39}
D	12	372S0049	管継手	Joint	2			☞ {MC:5.39}
E	13	341Y0343	アーム	Arm	1			☞ {MC:5.69}
E	14	356N9683B	ブラケット	Bracket	1			☞ {MC:5.46}
E	15	356N9682A	ブラケット	Bracket	1			☞ {MC:5.47}
D	16	370NC200	ホース	Hose	1	L ≒ 200mm		☞ {MC:5.48}
E	17	316S0146	止め具	Clamp	2			☞ {MC:5.48}
E	18	386N1328	緩衝機材	Shock Absorber	1			☞ {MC:5.69}
D	19	315N0011	止め輪	Snap Ring	1			☞ {MC:5.49}
E	20	356N9875A	ブラケット	Bracket	1			☞ {MC:5.48}
E	21	356N9874A	ブラケット	Bracket	1			☞ {MC:5.50}
D	22	392N0009A	吸着盤	Suction Cup	1			☞ {MC:5.49}
D	23	372S0053	管継手	Joint	1			☞ {MC:5.48}
D	24	372S0049	管継手	Joint	1			☞ {MC:5.48}
D	25	375S0040	パッキン	Packing	2			☞ {MC:5.48}
D	26	370NC200	ホース	Hose	1	L ≒ 200mm		☞ {MC:5.50}
E	27	316S0146	止め具	Clamp	2			☞ {MC:5.50}
D	28	372S0053	管継手	Joint	1			☞ {MC:5.50}
D	29	372S0049	管継手	Joint	1			☞ {MC:5.50}
D	30	375S0040	パッキン	Packing	2			☞ {MC:5.50}
D	31	315N0011	止め輪	Snap Ring	1			☞ {MC:5.51}
D	32	392N0009A	吸着盤	Suction Cup	1			☞ {MC:5.51}

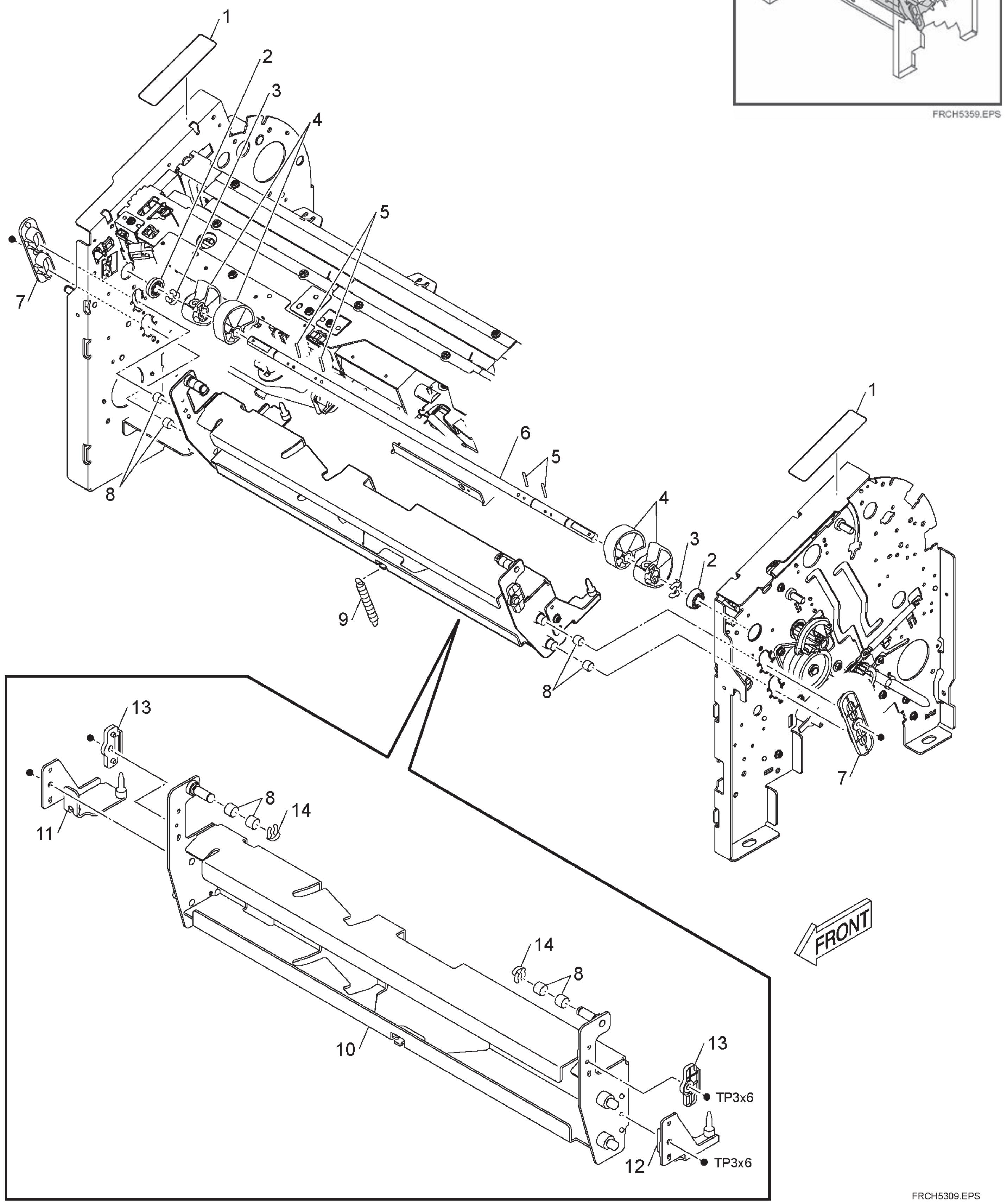
03H カセッテセット部 8 CASSETTE SET UNIT 8



FRCH5359.EPS

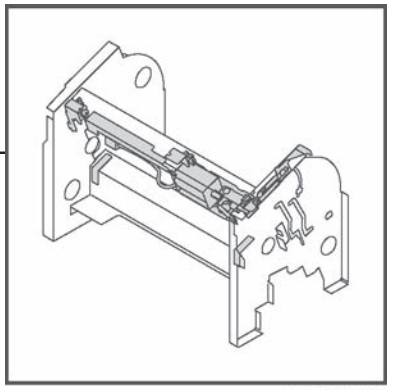
カセッテセット部 8
CASSETTE SET UNIT 8 03H

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
E	1	405N0186	銘板	Label	2			☞ {MC:5.2}
D	2	322SY251	すべり軸受	Plain Bearing	2			☞ {MC:5.14}
D	3	315S0051	止め輪	Snap Ring	2			☞ {MC:5.14}
D	4	329N0167B	カム	Cam	4			☞ {MC:5.14}
E	5	310S7002016	平行ピン	Pin	4			☞ {MC:5.14}
E	6	319N4086B	軸	Shaft	1			☞ {MC:5.14}
D	7	322N1015C	すべり軸受	Plain Bearing	2			☞ {MC:5.13}
D	8	322SY094	すべり軸受	Plain Bearing	8			☞ {MC:5.13}
D	9	388N2560A	引張りコイルバネ	Extension Spring	1	L ≒ 43mm		☞ {MC:5.13}
E	10	357Y0206E	台	Base	1			☞ {MC:5.13}
E	11	342Y0027B	レバー	Lever	1			☞ {MC:5.13}
E	12	342Y0026B	レバー	Lever	1			☞ {MC:5.13}
E	13	362N0769A	受	Guide	2			☞ {MC:5.13}
D	14	315S0050	止め輪	Snap Ring	2			☞ {MC:5.13}

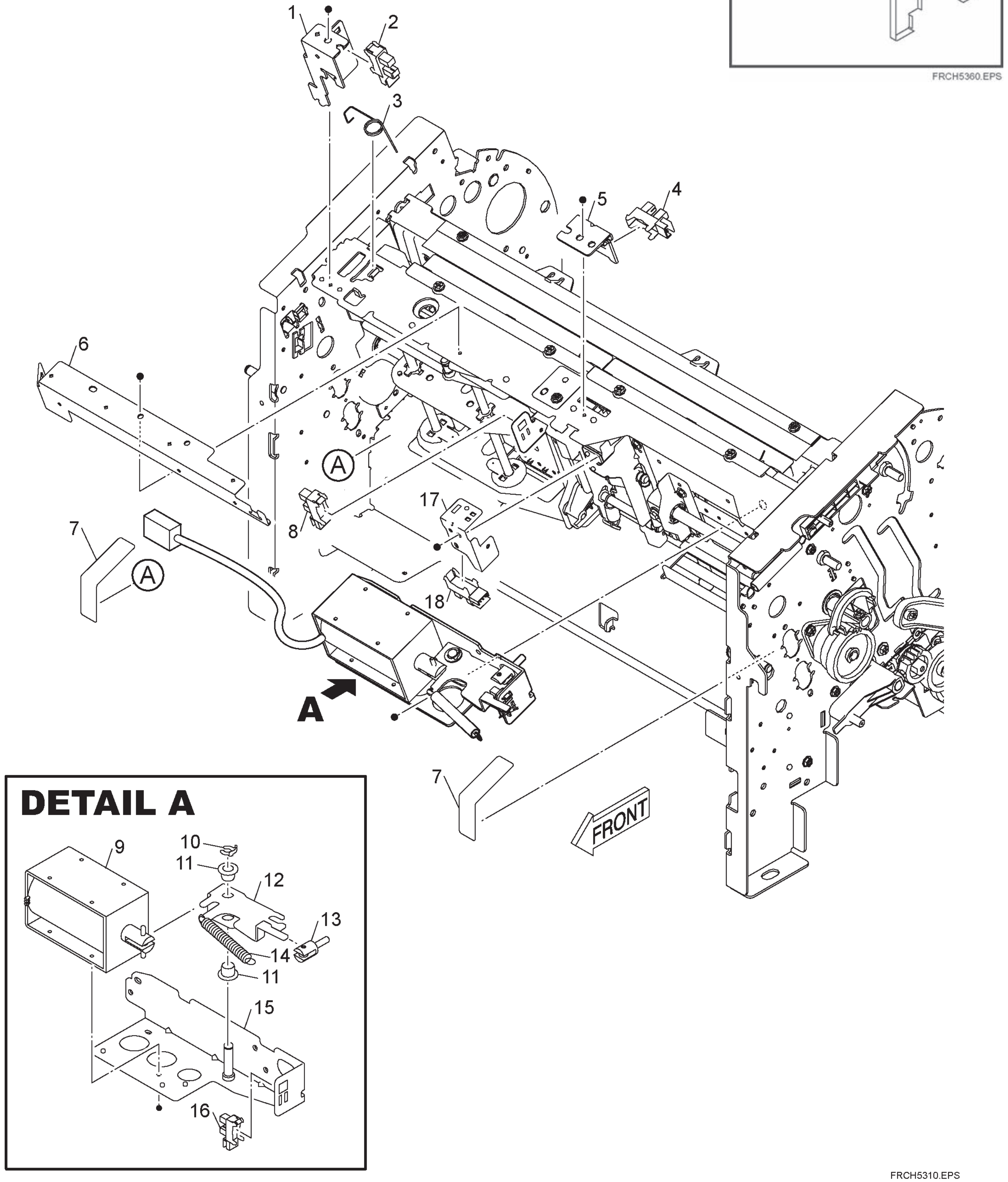


FRCH5309.EPS

03 I カセッテセット部 9 CASSETTE SET UNIT 9



FRCH5360.EPS

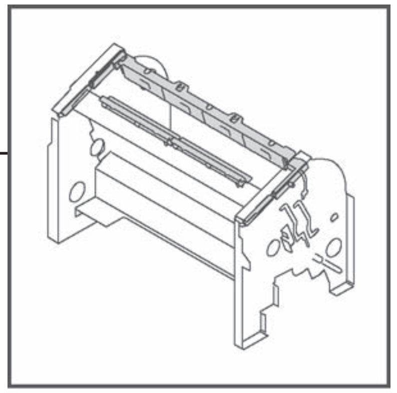


FRCH5310.EPS

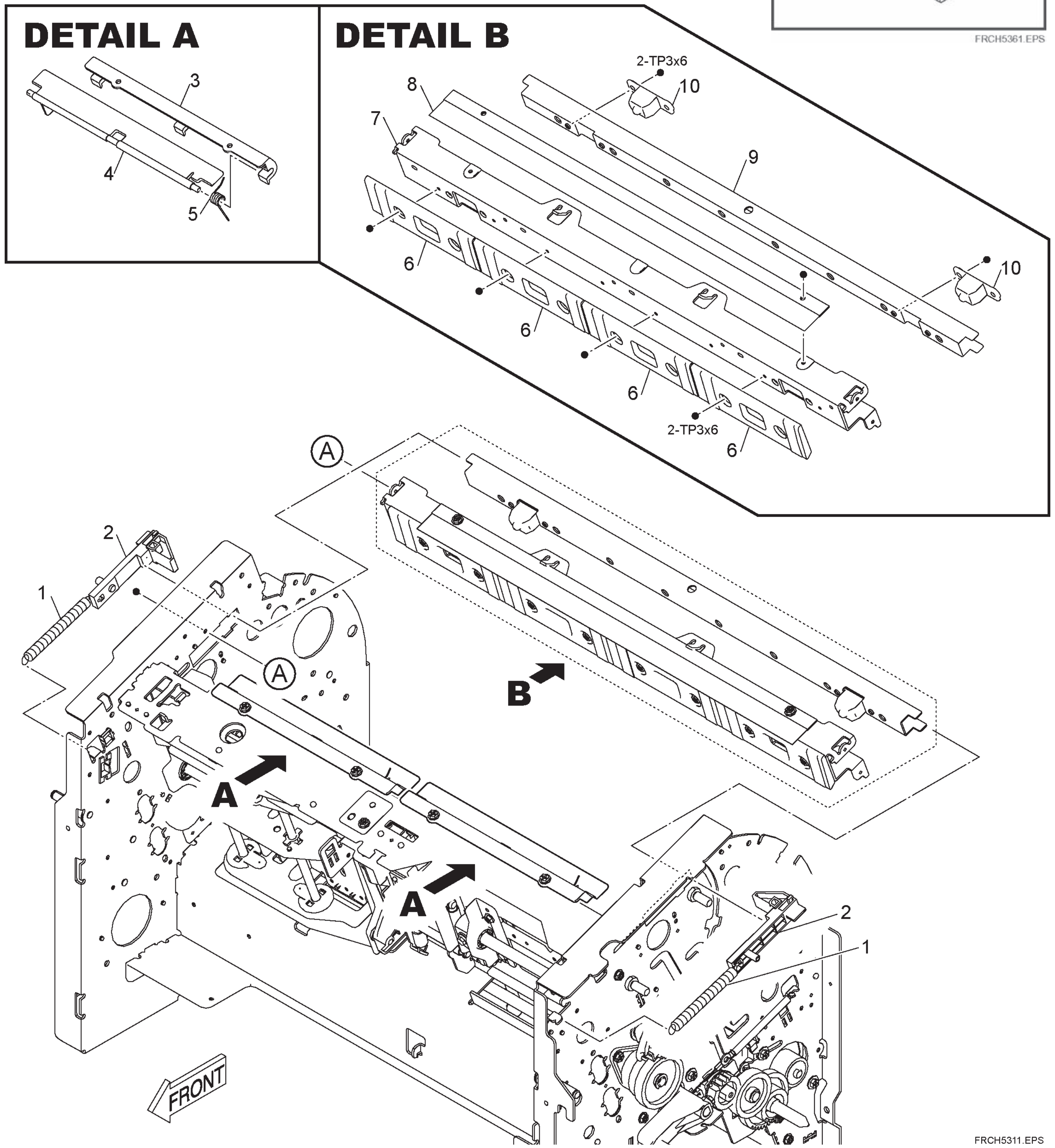
カセッテセット部 9 CASSETTE SET UNIT 9 03 I

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
E	1	356N10105A	ブラケット	Bracket	1			☞ {MC:5.65}
D	2	146S0029A	ホトインタラプタ	Photo Sensor	1	SA15		☞ {MC:5.65}
D	3	388N3106B	ねじりコイルバネ	Torsion Coil Spring	1			☞ {MC:5.66}
D	4	146S0029A	ホトインタラプタ	Photo Sensor	1	SA11		☞ {MC:5.28}
E	5	356N9810D	ブラケット	Bracket	1			☞ {MC:5.28}
E	6	356N9812C	ブラケット	Bracket	1			☞ {MC:5.15}
E	7	386N1322A	緩衝機材	Shock Absorber	2			☞ {MC:5.13}
D	8	146S0029A	ホトインタラプタ	Photo Sensor	1	SA14		☞ {MC:5.27}
D	9	107Y0183	ソレノイド	Solenoid	1	SOLA1, TDS-12F-04		☞ {MC:5.64}
D	10	315S0050	止め輪	Snap Ring	1			☞ {MC:5.64}
D	11	322SY066	すべり軸受	Plain Bearing	2			☞ {MC:5.64}
E	12	341N1136D	アーム	Arm	1			☞ {MC:5.64}
E	13	319Y1164A	軸	Shaft	1			☞ {MC:5.64}
D	14	388N2563A	引張りコイルバネ	Extension Spring	1	L ≒ 38mm		☞ {MC:5.63}
E	15	346Y0083D	補助板	Plate Support	1			☞ {MC:5.64}
D	16	146S0029A	ホトインタラプタ	Photo Sensor	1	SA2		☞ {MC:5.64}
E	17	356N9877B	ブラケット	Bracket	1			☞ {MC:5.62}
D	18	146S0029A	ホトインタラプタ	Photo Sensor	1	SA9		☞ {MC:5.62}

03J カセッテセット部 10
CASSETTE SET UNIT 10



FRCH5361.EPS


DETAIL A
3
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5
DETAIL B
2-TP3x6
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8
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9
6
6
6
10
2-TP3x6
6
A
2
1
A
B
A
A
2
1
FRONT

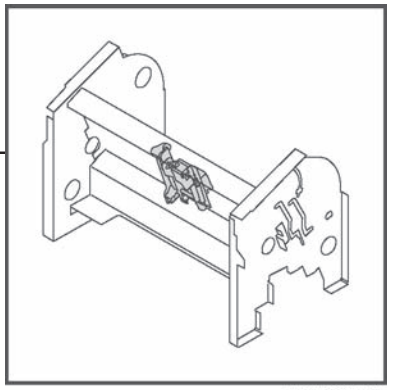
FRCH5311.EPS

カセッテセット部 10
CASSETTE SET UNIT 10 03J

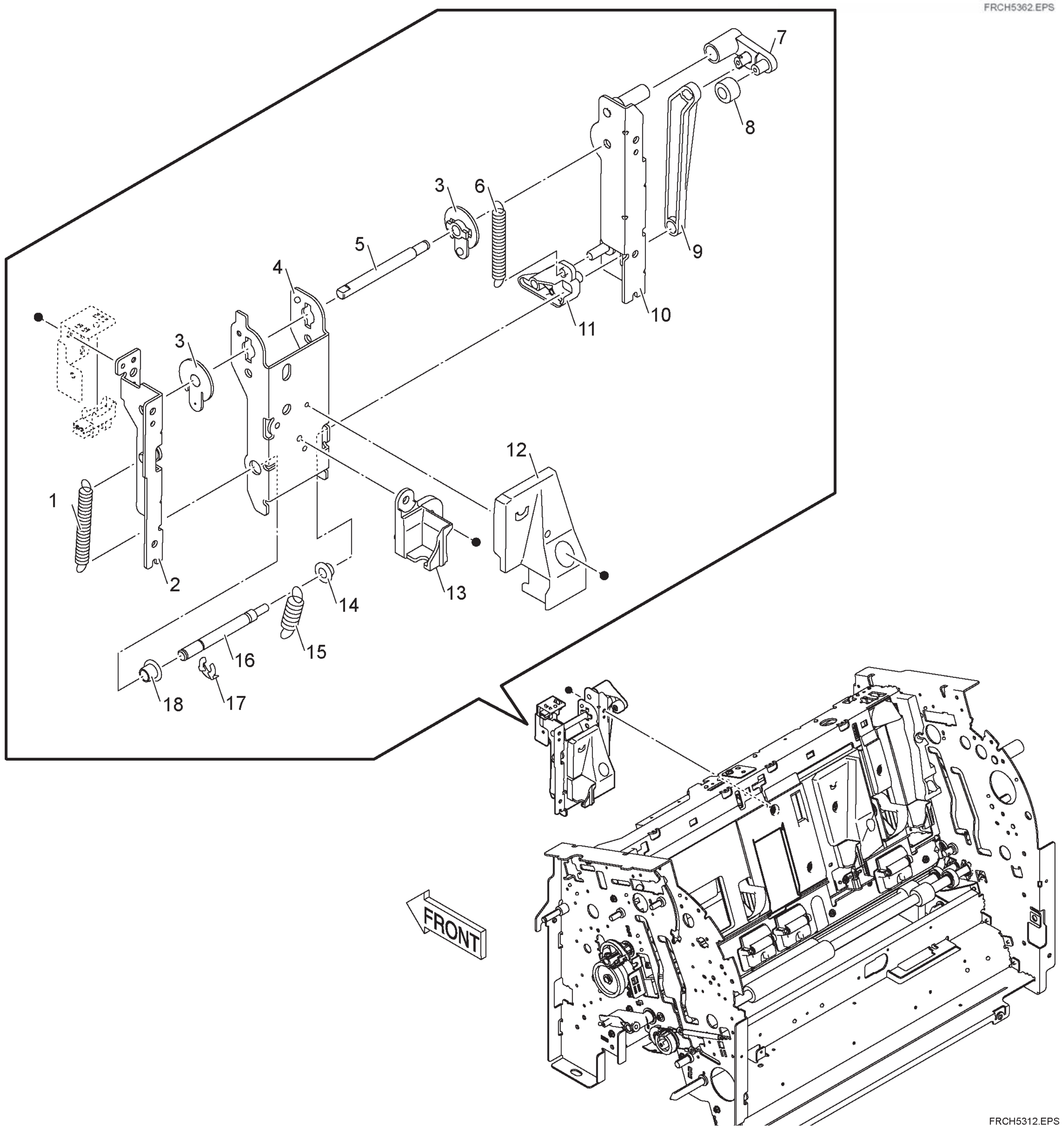
RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
D	1	388N2560A	引張りコイルバネ	Extension Spring	2	L ≒ 43mm		☞ {MC:5.25}
E	2	342N0132B	レバー	Lever	2			☞ {MC:5.25}
E	3	362N0764B	受	Holder	2			☞ {MC:5.17}
D	4	350N2643B	蓋	Shutter	2			☞ {MC:5.17}
D	5	388N3101D	ねじりコイルバネ	Torsion Coil Spring	2			☞ {MC:5.17}
E	6	363N2506B	ガイド	Guide	4			☞ {MC:5.26}
E	7	356N9472B	ブラケット	Bracket	1			☞ {MC:5.26}
D	8	387N0168	帯電防止材	Antistatic Brush	1			☞ {MC:5.16}
E	9	341N1053A	アーム	Arm	1			☞ {MC:5.25}
D	10	362N0763D	受	Stopper	2			☞ {MC:5.25}

03K カセッテセット部 11 CASSETTE SET UNIT 11

カセッテセット部 11
CASSETTE SET UNIT 11
03K



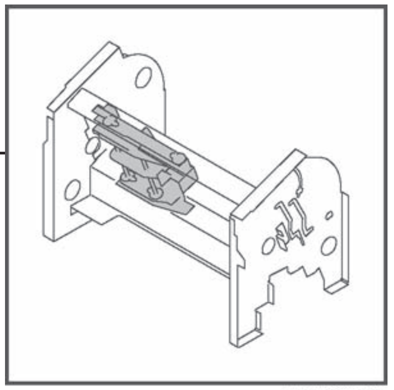
FRCH5362.EPS

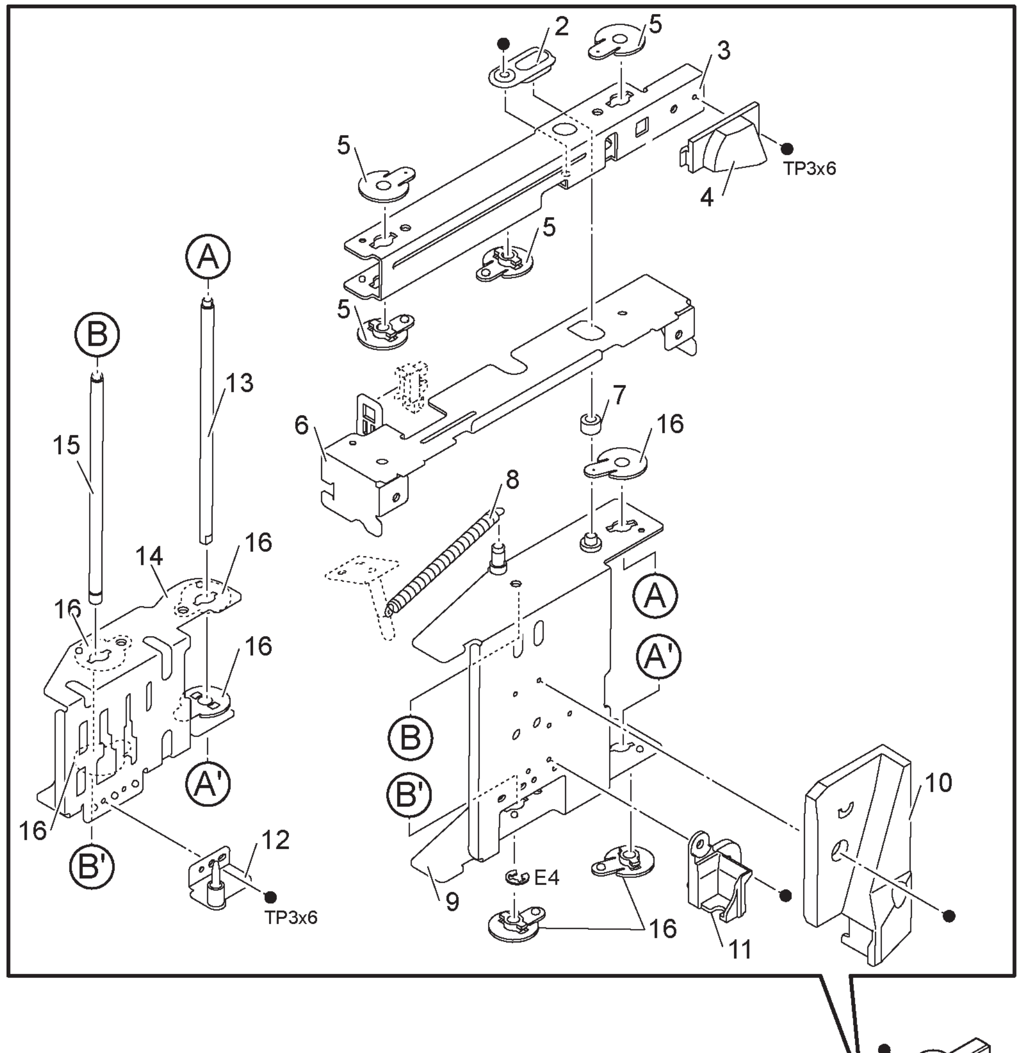


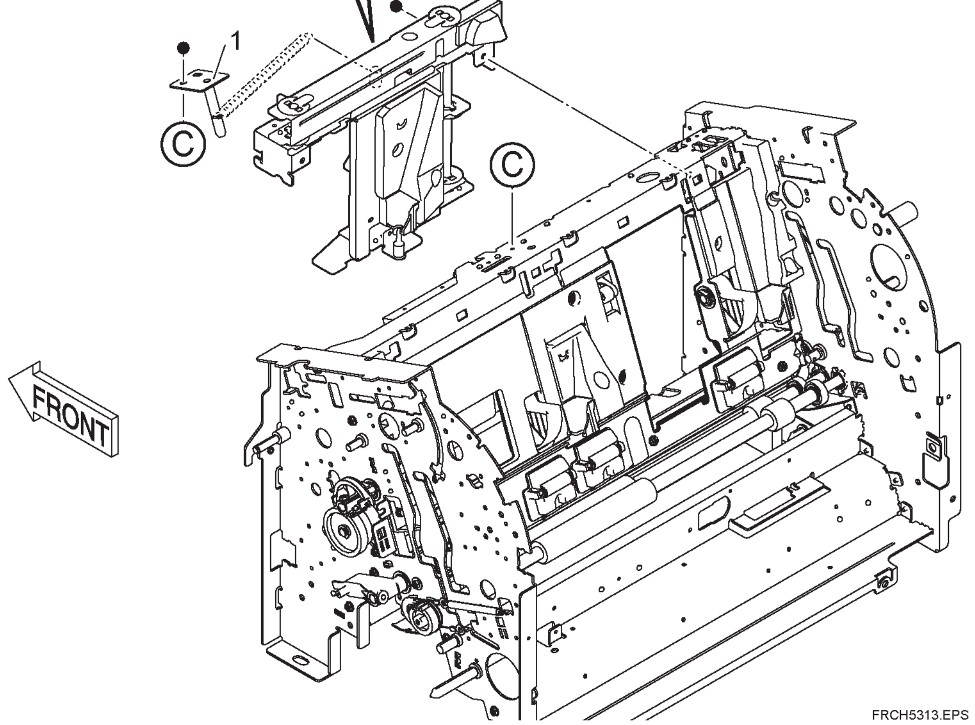
FRCH5312.EPS

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
D	1	388N2566	引張りコイルバネ	Extension Spring	1	L ≒ 40mm		☞ {MC:5.68}
E	2	356Y0354C	ブラケット	Bracket	1			☞ {MC:5.68}
D	3	322N1016D	すべり軸受	Plain Bearing	2			☞ {MC:5.68}
E	4	353N0144	シャーシ	Chassis	1			☞ {MC:5.68}
E	5	319N4116A	軸	Shaft	1			☞ {MC:5.68}
D	6	388N2568	引張りコイルバネ	Extension Spring	1	L ≒ 51mm		☞ {MC:5.68}
E	7	341N1165C	アーム	Arm	1			☞ {MC:5.68}
D	8	334N2392	樹脂ローラ	Resin Roller	1			☞ {MC:5.68}
E	9	341N1166B	アーム	Arm	1			☞ {MC:5.68}
E	10	356Y0355A	ブラケット	Bracket	1			☞ {MC:5.68}
D	11	328N0046B	爪	Claw	1			☞ {MC:5.68}
D	12	362N0768B	受	Guide	1			☞ {MC:5.68}
D	13	332N0622C	ストッパ	Stopper	1			☞ {MC:5.68}
D	14	322SY067	すべり軸受	Plain Bearing	1			☞ {MC:5.68}
D	15	388N2567	引張りコイルバネ	Extension Spring	1	L ≒ 24mm		☞ {MC:5.68}
E	16	319N4115A	軸	Shaft	1			☞ {MC:5.68}
D	17	315S0050	止め輪	Snap Ring	1			☞ {MC:5.68}
D	18	322SY066	すべり軸受	Plain Bearing	1			☞ {MC:5.68}

03L カセッテセット部 12
CASSETTE SET UNIT 12


FRCH5363.EPS



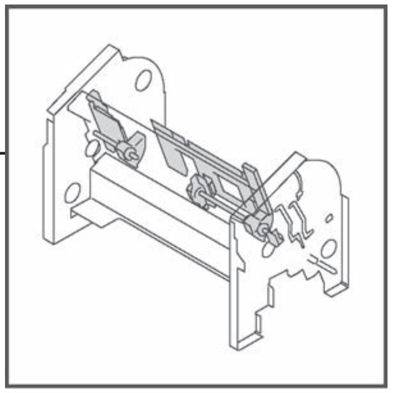


FRCH5313.EPS

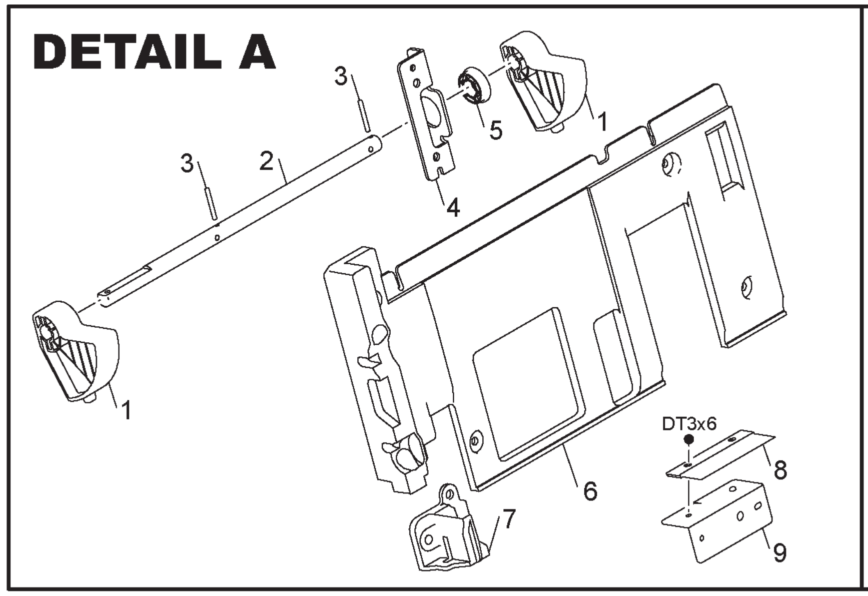
カセッテセット部 12
CASSETTE SET UNIT 12
03L

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
E	1	310Y0008A	ピン	Pin	1			☞ {MC:5.66}
D	2	322N1017B	すべり軸受	Plain Bearing	1			☞ {MC:5.66}
E	3	341N1051B	アーム	Arm	1			☞ {MC:5.66}
E	4	363N2505B	ガイド	Guide	1			☞ {MC:5.66}
D	5	322N1016D	すべり軸受	Plain Bearing	4			☞ {MC:5.66}
E	6	356N9809E	ブラケット	Bracket	1			☞ {MC:5.67}
D	7	322SY101	すべり軸受	Plain Bearing	1			☞ {MC:5.67}
D	8	388N2565A	引張りコイルバネ	Extension Spring	1	L ≒ 45mm		☞ {MC:5.66}
E	9	353Y0072E	シャーシ	Chassis	1			☞ {MC:5.67}
D	10	362N0762D	受	Guide	1			☞ {MC:5.75}
D	11	332N0622C	ストッパ	Stopper	1			☞ {MC:5.78}
E	12	342Y0028B	レバー	Lever	1			☞ {MC:5.79}
E	13	319N3943D	軸	Shaft	1			☞ {MC:5.67}
E	14	357N1531D	台	Base	1			☞ {MC:5.67}
E	15	319N4090B	軸	Shaft	1			☞ {MC:5.67}
D	16	322N1016D	すべり軸受	Plain Bearing	7			☞ {MC:5.67}

03M カセッテセット部 13
CASSETTE SET UNIT 13



FRCH5364.EPS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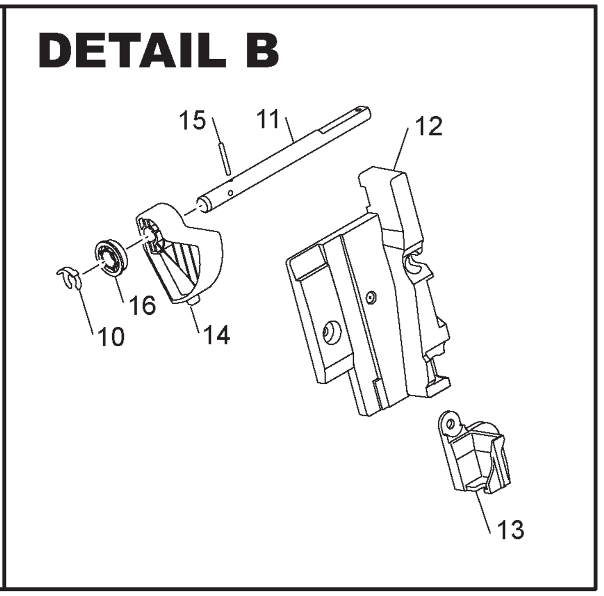
DETAIL B
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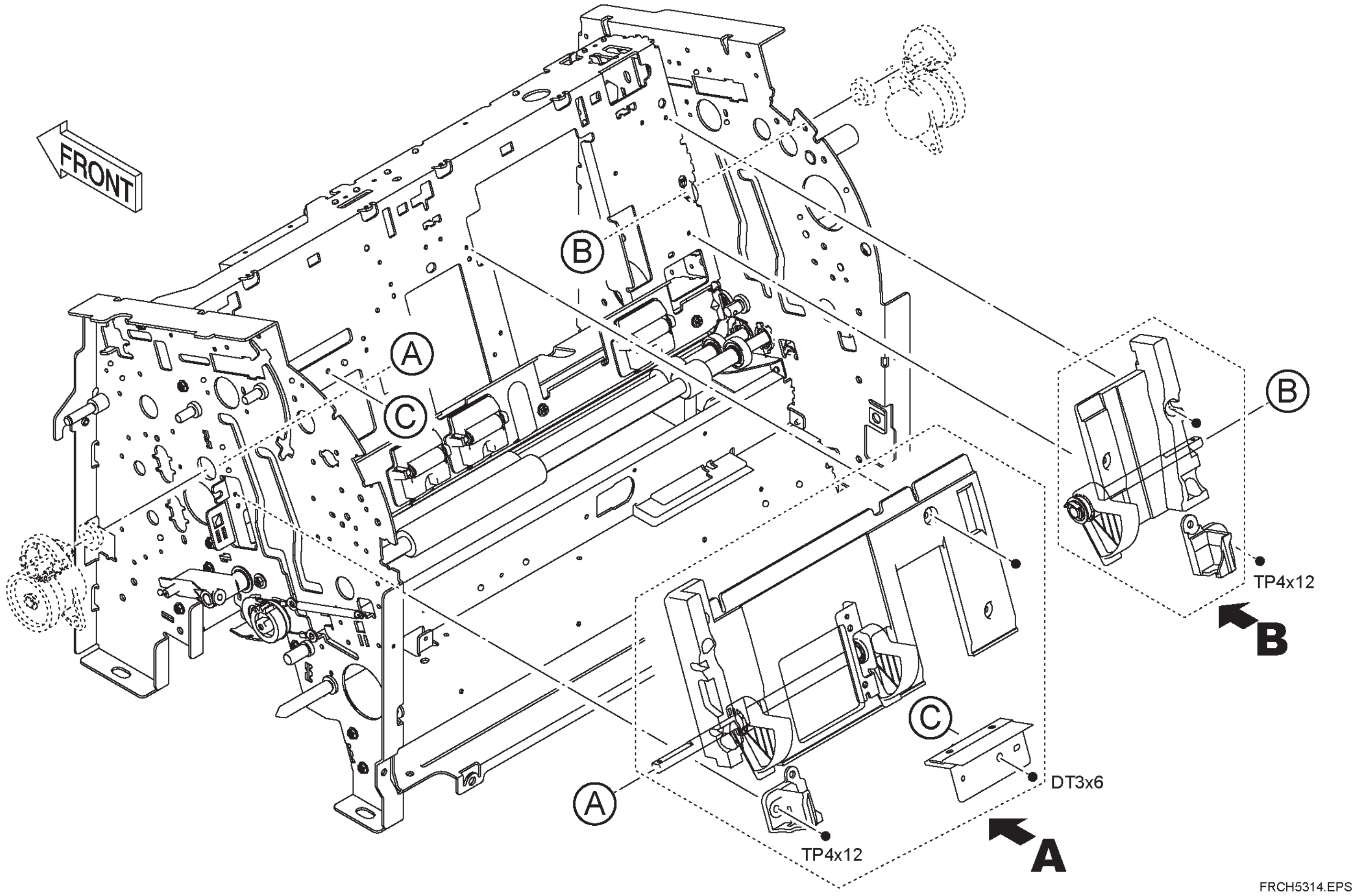
12
16
10
14
13


FRONT
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TP4x12
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C
DT3x6
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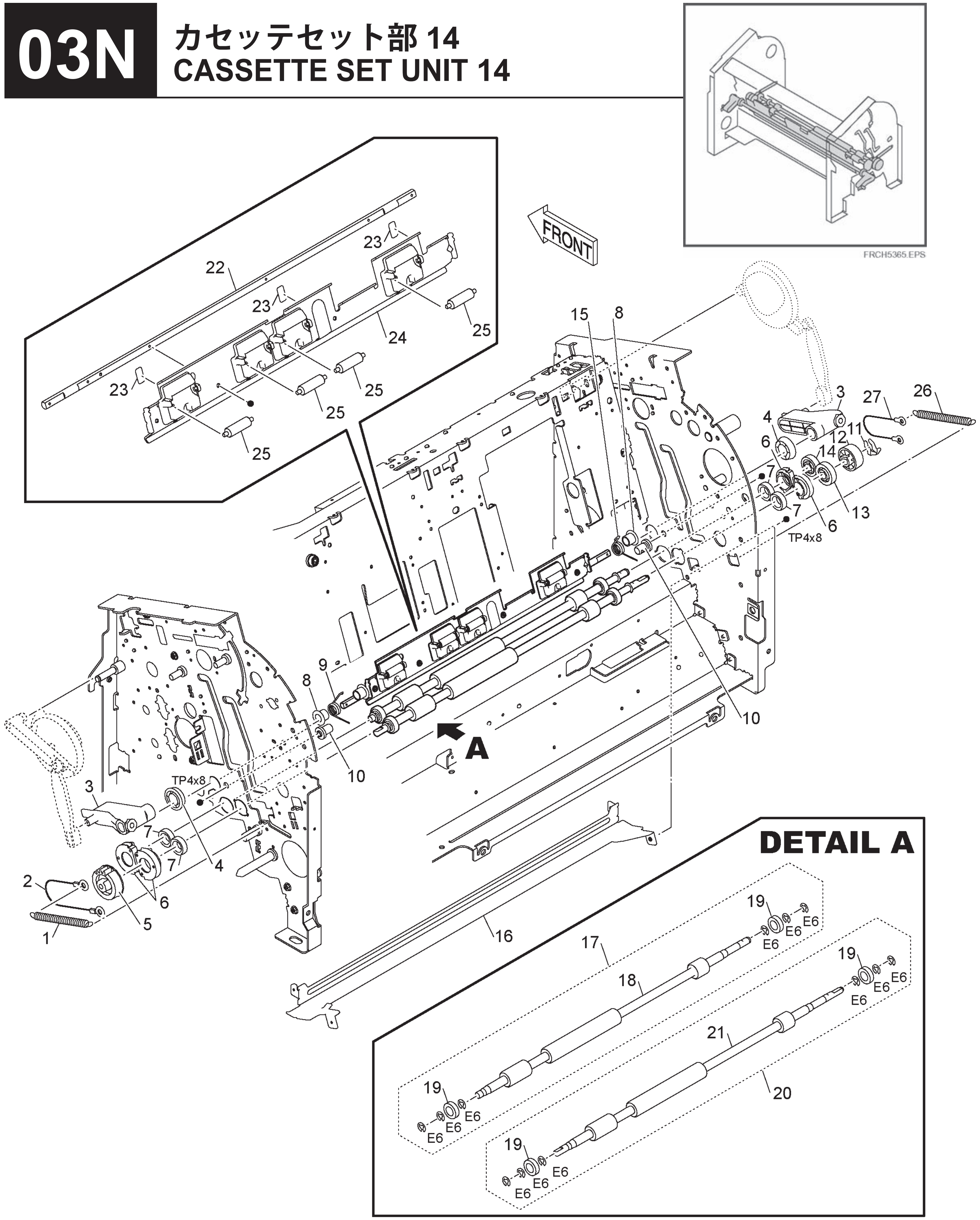
TP4x12
A

FRCH5314.EPS

カセッテセット部 13
CASSETTE SET UNIT 13
03M

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
E	1	341N1052D	アーム	Arm	2			☞ {MC:5.81}
E	2	319N3944C	軸	Shaft	1			☞ {MC:5.81}
E	3	310S7002016	平行ピン	Pin	2			☞ {MC:5.81}
E	4	356N9873A	ブラケット	Bracket	1			☞ {MC:5.81}
D	5	322SY251	すべり軸受	Plain Bearing	1			☞ {MC:5.81}
D	6	362N0723D	受	Guide Plate	1			☞ {MC:5.73}
D	7	332N0621D	ストッパ	Stopper	1			☞ {MC:5.76}
E	8	387N0190B	帯電防止材	Antistatic Brush	1			☞ {MC:5.72}
E	9	356N10110	ブラケット	Bracket	1			☞ {MC:5.72}
D	10	315S0051	止め輪	Snap Ring	1			☞ {MC:5.83}
E	11	319N4085B	軸	Shaft	1			☞ {MC:5.83}
D	12	362N0724C	受	Guide	1			☞ {MC:5.74}
D	13	332N0622C	ストッパ	Stopper	1			☞ {MC:5.77}
E	14	341N1052D	アーム	Arm	1			☞ {MC:5.83}
E	15	310S7002016	平行ピン	Pin	1			☞ {MC:5.83}
D	16	322SY251	すべり軸受	Plain Bearing	1			☞ {MC:5.83}

03N カセッテセット部 14
CASSETTE SET UNIT 14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DETAIL A
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E6

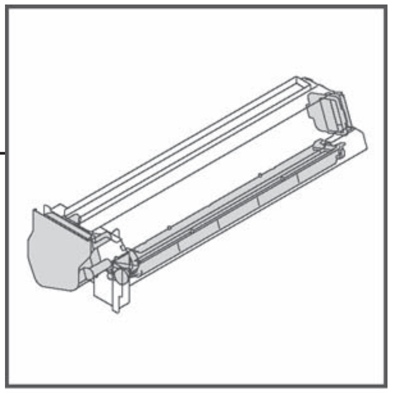
FRCH5365.EPS

FRCH5315.EPS

カセッテセット部 14
CASSETTE SET UNIT 14 03N

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
D	1	388N2594B	引張りコイルバネ	Extension Spring	1	L ≒ 40mm		☞ {MC:5.55}
D	2	383Y0075A	ワイヤ	Wire	1			☞ {MC:5.55}
E	3	341N1137D	アーム	Arm	2			☞ {MC:5.71}
D	4	322SY251	すべり軸受	Plain Bearing	2			☞ {MC:5.71}
D	5	327N1121801B	平歯車	Spur Gear	1			☞ {MC:5.54}
D	6	360N0475A	ハウジング	Housing	4			☞ {MC:5.57}
D	7	322NB002	ころがり軸受	Ball Bearing	4			☞ {MC:5.57}
D	8	322SY121	すべり軸受	Plain Bearing	2			☞ {MC:5.71}
D	9	388N3104B	ねじりコイルバネ	Torsion Coil Spring	1			☞ {MC:5.71}
E	10	310N0714A	ピン	Pin	2			☞ {MC:5.71}
D	11	315S0050	止め輪	Snap Ring	1			☞ {MC:5.57}
D	12	340D775280A	つまみ（ノブ）	Knob	1			☞ {MC:5.57}
D	13	327N1121605C	平歯車	Spur Gear	1			☞ {MC:5.57}
D	14	327N1121608A	平歯車	Spur Gear	1			☞ {MC:5.57}
D	15	388N3105B	ねじりコイルバネ	Torsion Coil Spring	1			☞ {MC:5.71}
E	16	363N2507A	ガイド	Guide	1			☞ {MC:5.56}
D	17	334Y3208A	ゴムローラ	Rubber Roller	1			☞ {MC:5.57}
D	18	334N3617B	ゴムローラ	Rubber Roller	1			☞ {MC:5.57}
D	19	322SF145	軸受	Bearing	4			☞ {MC:5.57}
D	20	334Y3207A	ゴムローラ	Rubber Roller	1			☞ {MC:5.57}
D	21	334N3616C	ゴムローラ	Rubber Roller	1			☞ {MC:5.57}
E	22	319N4089C	軸	Shaft	1			☞ {MC:5.71}
E	23	386N1323	緩衝機材	Shock Absorber	3			☞ {MC:5.71}
E	24	356Y0356B	ブラケット	Bracket	1			☞ {MC:5.71}
D	25	334N3618B	ゴムローラ	Rubber Roller	4			☞ {MC:5.71}
D	26	388N2594B	引張りコイルバネ	Extension Spring	1	L ≒ 40mm		☞ {MC:5.57}
D	27	383Y0075A	ワイヤ	Wire	1			☞ {MC:5.57}

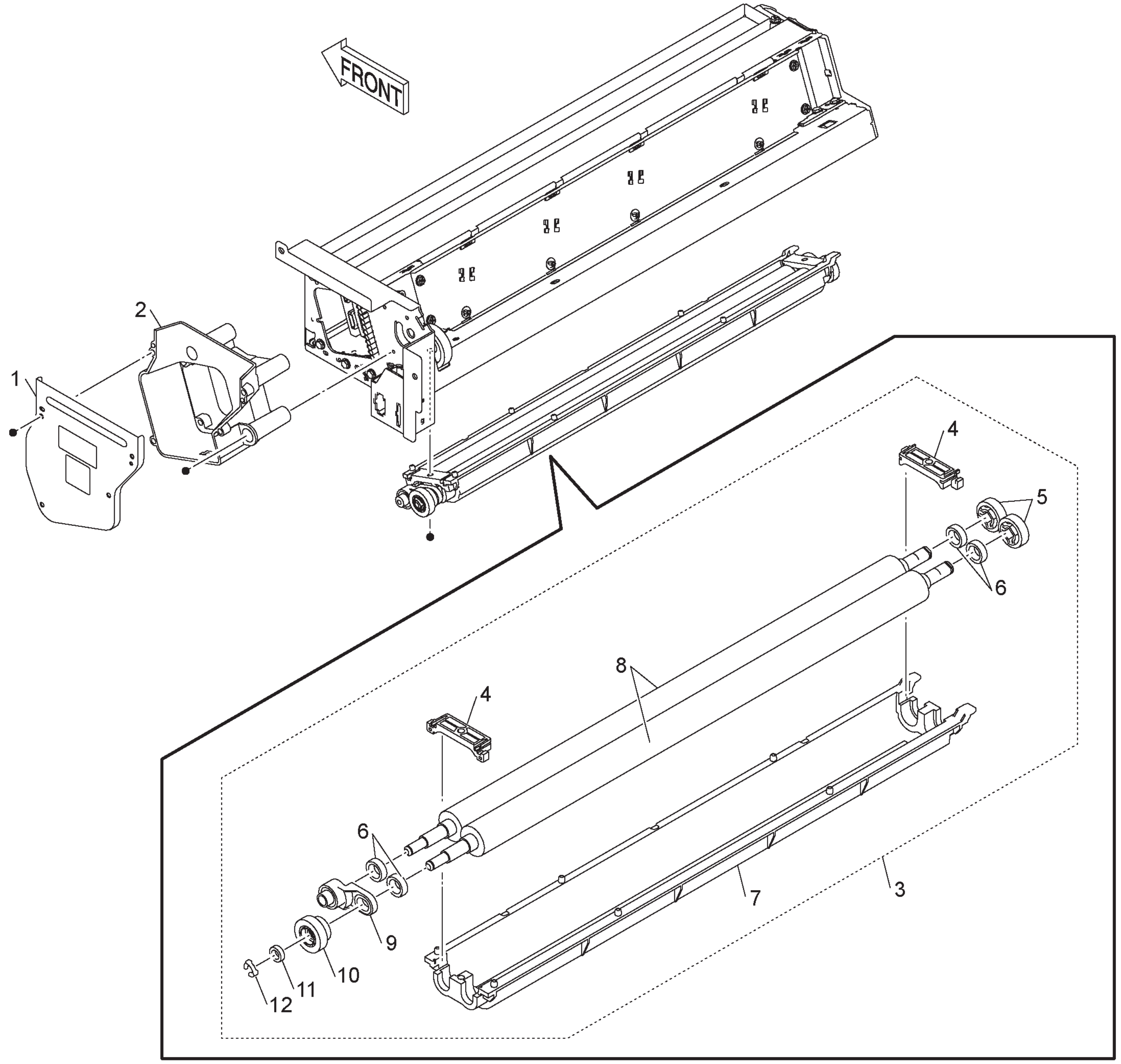
04A 消去部 1 ERASURE UNIT 1



FRCH5451.EPS

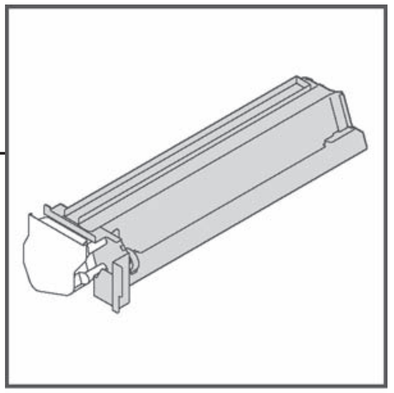
消去部 1
ERASURE UNIT 1 04A

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
E	1	350Y1867	カバー	Cover	1			☞ {MC:6.2}
E	2	369N0281D	ダクト	Duct	1			☞ {MC:6.4}
D	3	334Y5010A	ブラシローラ	Brush Roller	1			☞ {MC:6.8}
E	4	350N2972C	蓋	Cover	2			☞ {MC:6.9}
D	5	327N1121608A	平歯車	Spur Gear	2			☞ {MC:6.9}
D	6	322NB002	ころがり軸受	Ball Bearing	4			☞ {MC:6.9}
E	7	362N0780C	受	Box	1			☞ {MC:6.9}
A	8	334N5027	ブラシローラ	Brush Roller	2			☞ {MC:6.9}
D	9	332N0620	ストッパ	Stopper	1			☞ {MC:6.9}
D	10	327N0208	平歯車	Spur Gear	1			☞ {MC:6.9}
D	11	322SP203	ころがり軸受	Ball Bearing	1			☞ {MC:6.9}
D	12	315S0050	止め輪	Snap Ring	1			☞ {MC:6.9}

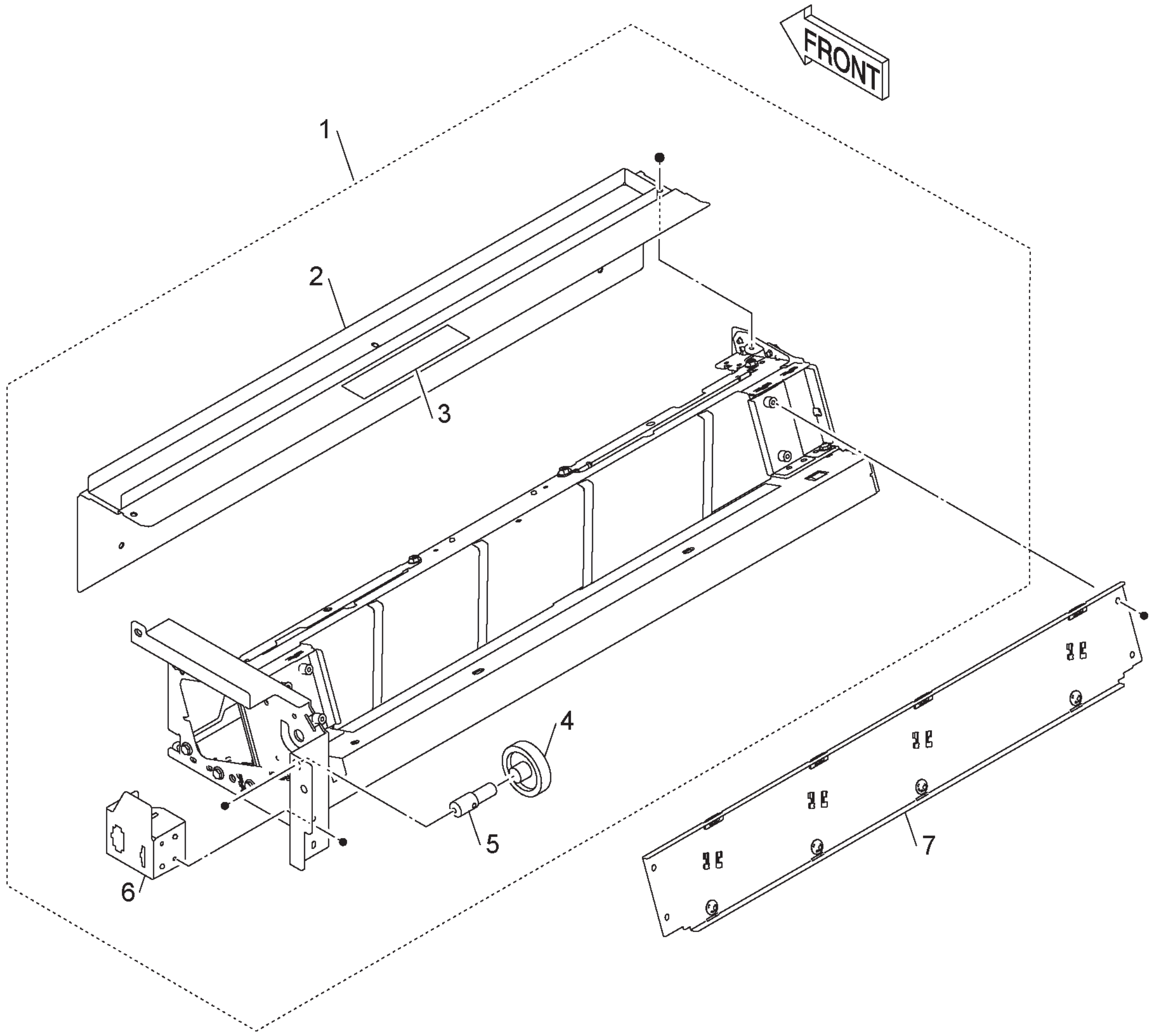


FRCH5404.EPS

04B 消去部 2
ERASURE UNIT 2



FRCH5452.EPS

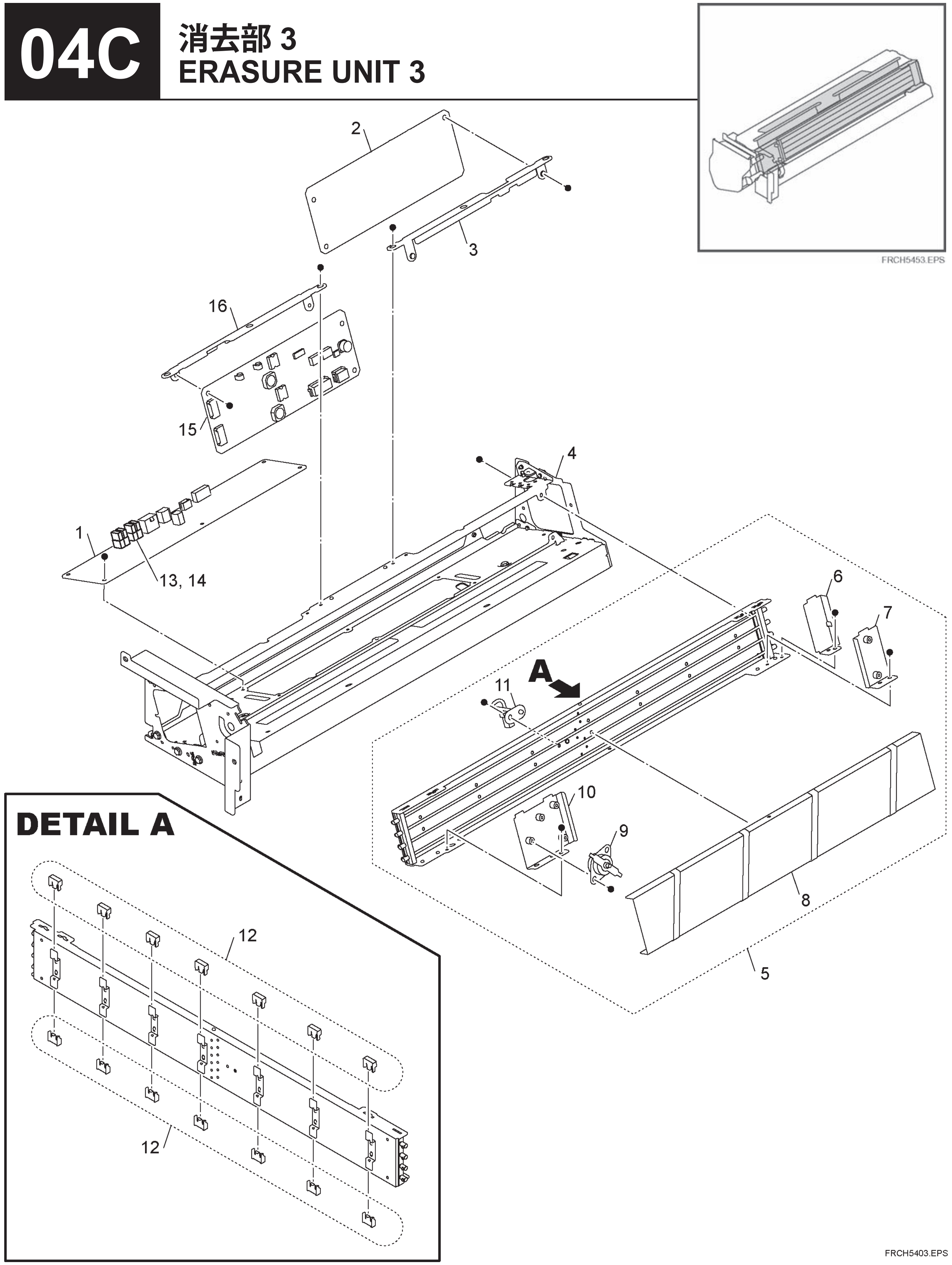


FRCH5405.EPS

消去部 2
ERASURE UNIT 2 04B

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
DR	1	840Y0112C	消去部	Erasure Unit	1			☞ {MC:6.14}
E	2	350Y1761D	カバー	Cover	1			☞ {MC:6.7}
E	3	405N3392	銘板	Label	1			☞ {MC:6.1}
D	4	327N1122501B	平歯車	Spur Gear	1			☞ {MC:6.11}
E	5	319N4177C	軸	Shaft	1			☞ {MC:6.11}
E	6	356N9829B	ブラケット	Bracket	1			—
D	7	407Y0031E	反射板	Reflective Plate	1			☞ {MC:6.6}

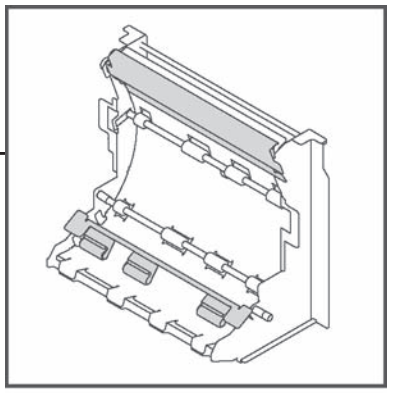
04C 消去部 3
ERASURE UNIT 3



消去部 3
ERASURE UNIT 3
04C

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
CR	1	113Y1756C	ERS23A	ERS23A	1			☞ {MC:6.17}
CR	2	109N0023	蛍光灯安定器	INV23A	1			☞ {MC:6.15}
E	3	356N9731C	ブラケット	Bracket	1			☞ {MC:6.15}
E	4	355Y0241	フレーム	Frame	1			—
DR	5	360Y0174C	ケース	Lamp Assembly	1			☞ {MC:6.18}
E	6	356N9851B	ブラケット	Bracket	1			☞ {MC:6.18}
E	7	356Y0368B	ブラケット	Bracket	1			☞ {MC:6.10}
A	8	603Y0070C	フィルタ	Filter	1			☞ {MC:6.10}
D	9	115Y0048D	感熱スイッチ	Thermo Switch	1	TSWB1		☞ {MC:6.12}
E	10	356Y0405B	ブラケット	Bracket	1			☞ {MC:6.18}
D	11	115Y0047B	サーミスタ	Thermo Switch	1	THEB1		☞ {MC:6.13}
E	12	350N3239C	蓋	Cap	14			☞ {MC:6.18}
AT	13	137S1280	ヒューズ	FUSE	2	48V/5.0A For ERS23A		☞ {MC:6.17}
AT	14	137S1277	ヒューズ	FUSE	2	48V/2.0A For ERS23A		☞ {MC:6.17}
CR	15	109N0023	蛍光灯安定器	INV23A	1			☞ {MC:6.16}
E	16	356N9731C	ブラケット	Bracket	1			☞ {MC:6.16}

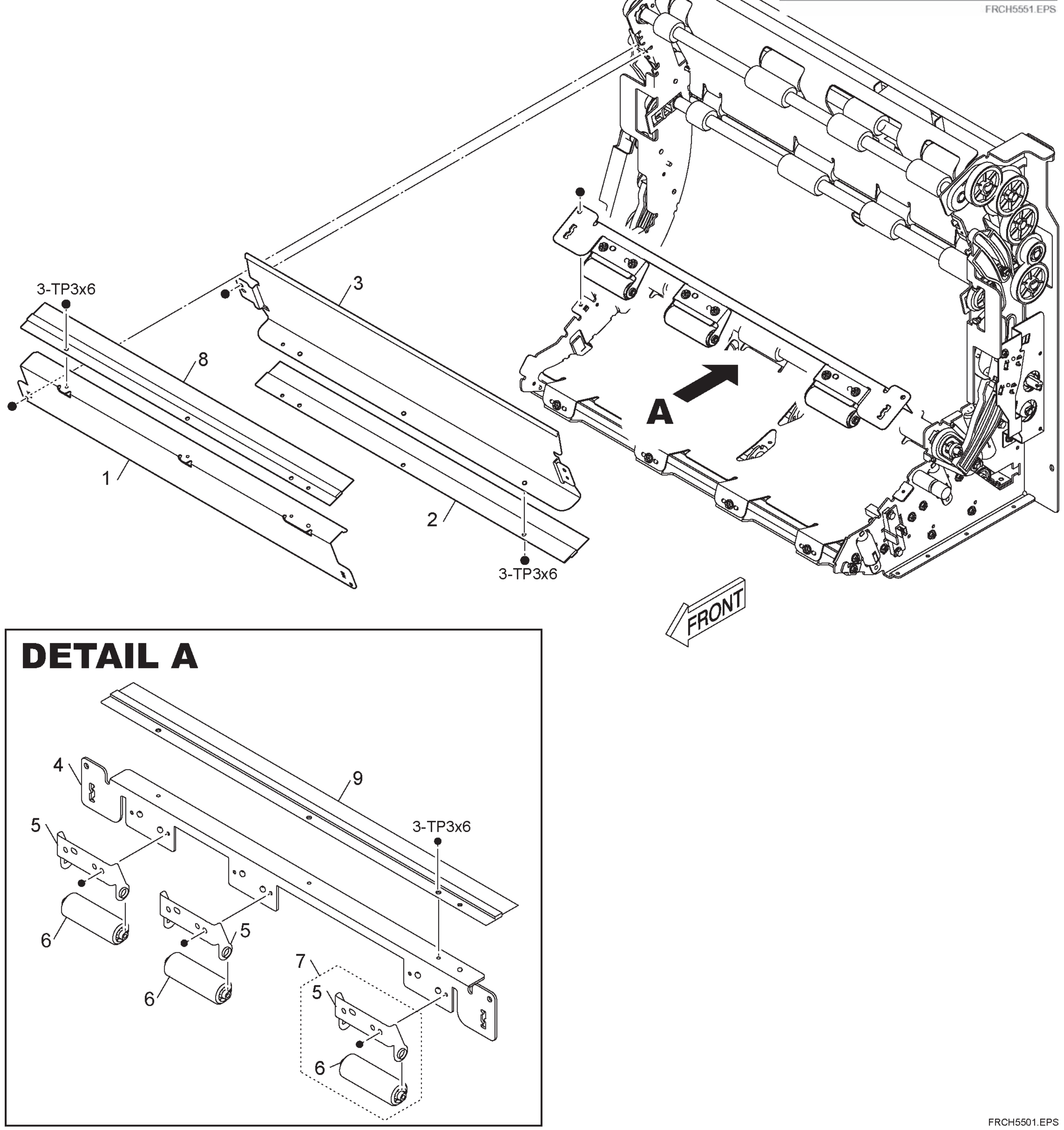
05A 幅寄搬送部 1 SIDE-POSITIONING CONVEYOR 1



FRCH5551.EPS

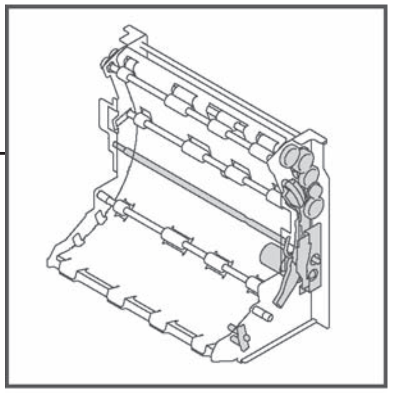
幅寄搬送部 1
SIDE-POSITIONING CONVEYOR 1 05A

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
E	1	363N2617C	ガイド	Guide	1			☞ {MC:7.6}
D	2	387N0186C	帯電防止材	Antistatic Brush	1			☞ {MC:7.7}
E	3	363N2728E	ガイド	Guide	1			☞ {MC:7.7}
E	4	356N9689A	ブラケット	Bracket	1			☞ {MC:7.8}
D	5	388N5414A	板バネ	Leaf Spring	3			☞ {MC:7.8}
D	6	334N3619	ゴムローラ	Resin Roller	3			☞ {MC:7.8}
D	7	334Y2255	樹脂ローラ	Resin Roller Assembly	3			☞ {MC:7.8}
D	8	387N0186C	帯電防止材	Antistatic Brush	1			☞ {MC:7.6}
D	9	387N0186C	帯電防止材	Antistatic Brush	1			☞ {MC:7.8}

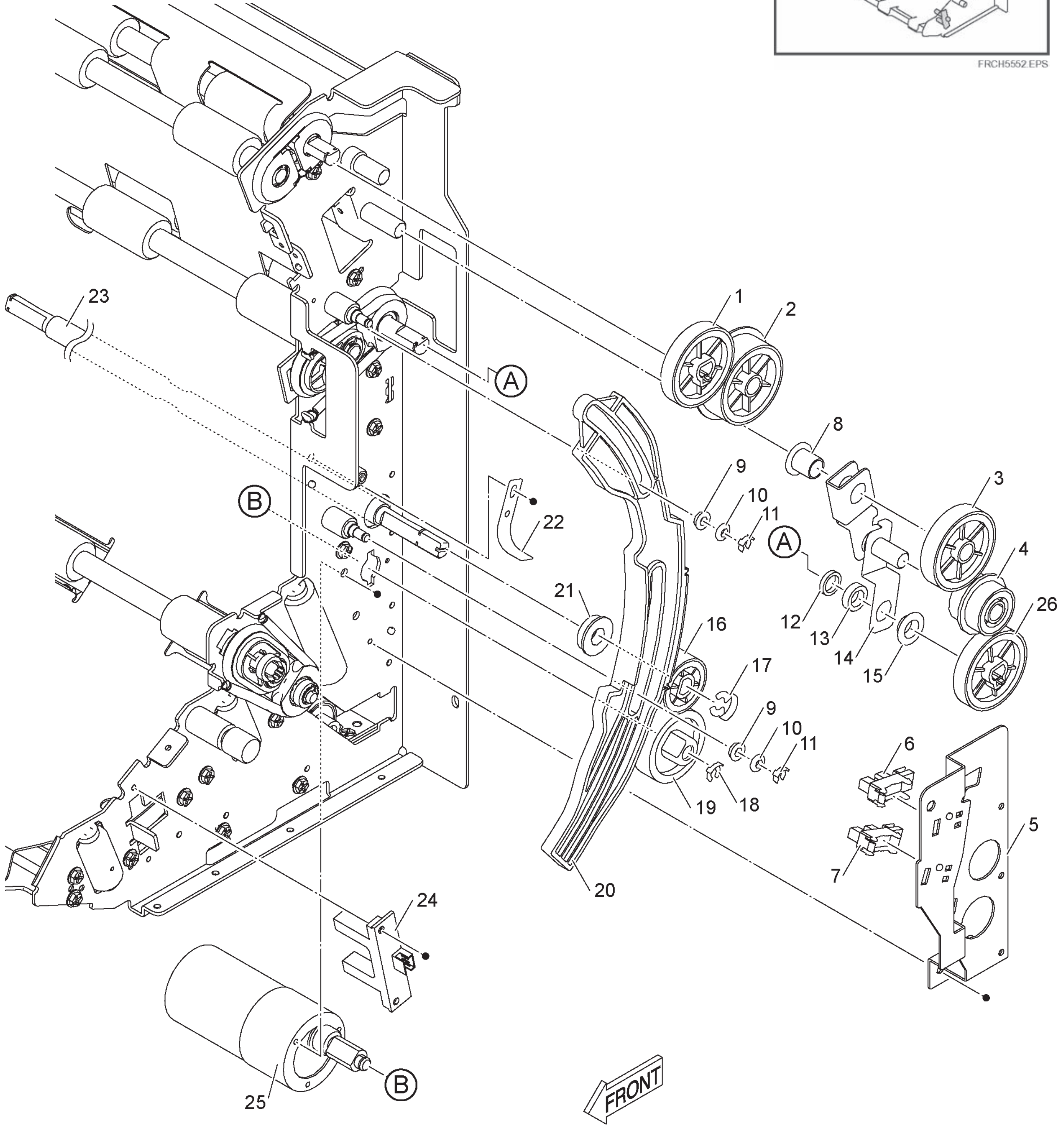


FRCH5501.EPS

05B 幅寄搬送部 2
SIDE-POSITIONING CONVEYOR 2


FRCH5552.EPS

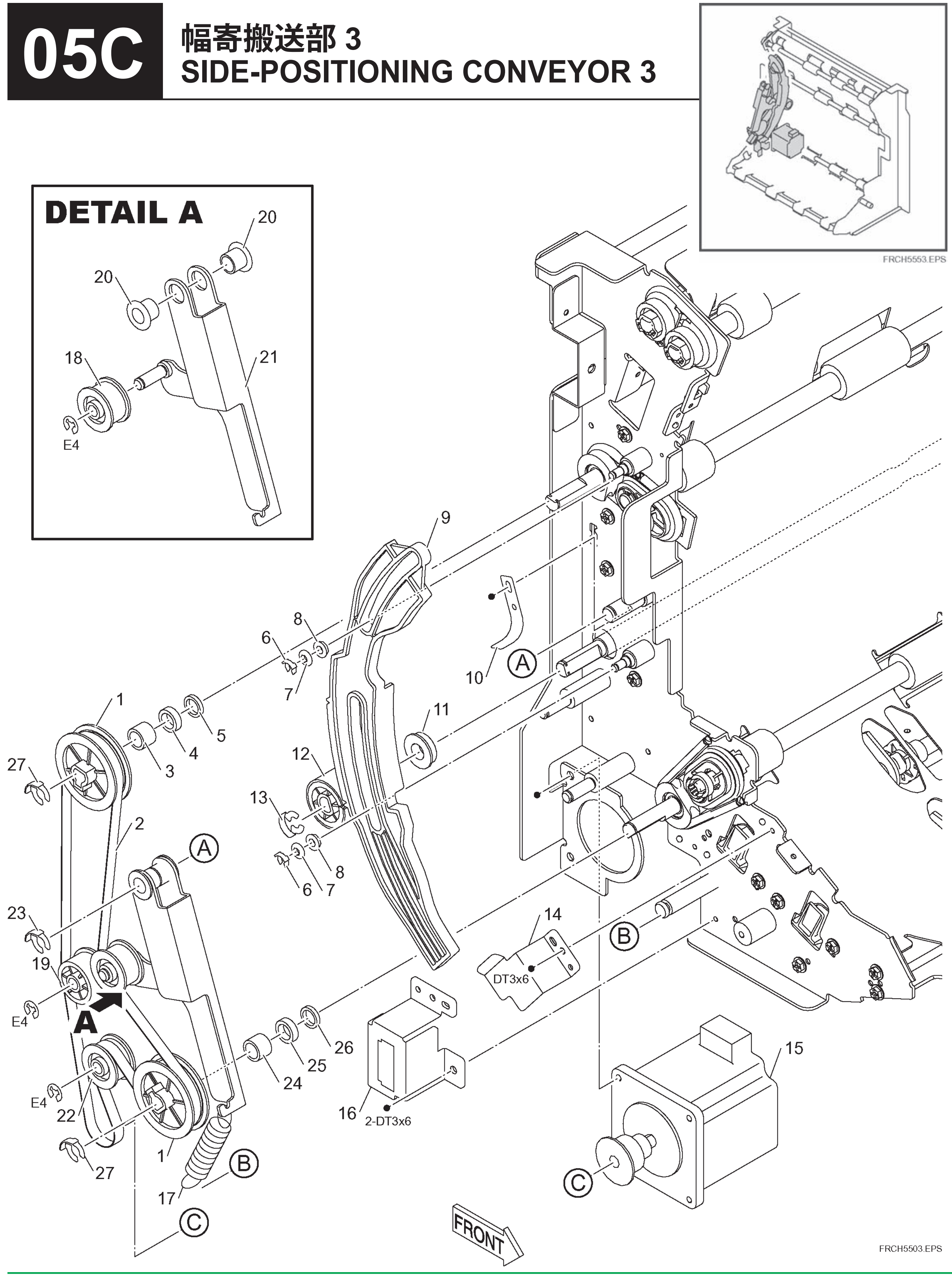
幅寄搬送部 2
SIDE-POSITIONING CONVEYOR 2 05B



FRCH5502.EPS

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
D	1	327N0219B	平歯車	Spur Gear	1			☞ {MC:7.12}
D	2	327N0218A	平歯車	Spur Gear	1			☞ {MC:7.12}
D	3	327N1122803B	平歯車	Spur Gear	1			☞ {MC:7.11}
D	4	327N0217A	平歯車	Spur Gear	1			☞ {MC:7.11}
E	5	356N9658D	ブラケット	Bracket	1			☞ {MC:7.2}
D	6	146S0029A	ホトインタラプタ	Photo Sensor	1	SC2		☞ {MC:7.3}
D	7	146S0029A	ホトインタラプタ	Photo Sensor	1	SC1		☞ {MC:7.3}
D	8	322SY059	すべり軸受	Plain Bearing	1			☞ {MC:7.11}
D	9	322SY303	すべり軸受	Plain Bearing	2			☞ {MC:7.14}
E	10	347N2034	スペーサ	Spacer	2			☞ {MC:7.14}
D	11	315S0053	止め輪	Snap Ring	2			☞ {MC:7.14}
E	12	347N1624A	スペーサ	Spacer	1			☞ {MC:7.44}
D	13	322NB003	ころがり軸受	Ball Bearing	1			☞ {MC:7.44}
E	14	342Y0035A	レバー	Lever	1			☞ {MC:7.11}
D	15	322SY232	すべり軸受	Plain Bearing	1			☞ {MC:7.11}
D	16	327N1102410C	平歯車	Spur Gear	1			☞ {MC:7.16}
D	17	315S0051	止め輪	Snap Ring	1			☞ {MC:7.16}
D	18	315S0050	止め輪	Snap Ring	1			☞ {MC:7.21}
D	19	327N1103208C	平歯車	Spur Gear	1			☞ {MC:7.21}
D	20	329N0178C	カム	Cam	1			☞ {MC:7.14}
D	21	322SP214	ころがり軸受	Ball Bearing	1			☞ {MC:7.16}
D	22	388N5421	板バネ	Leaf Spring	1			☞ {MC:7.9}
E	23	319N4084B	軸	Shaft	1			☞ {MC:7.16}
D	24	146N0016A	ホトインタラプタ	Photo Sensor	1	SC3		☞ {MC:7.17}
D	25	118YX271B	モータ	Motor	1	MC2, RB-35CM-FSF23		☞ {MC:7.21}
D	26	327N0219B	平歯車	Spur Gear	1			☞ {MC:7.11}

05C 幅寄搬送部 3
SIDE-POSITIONING CONVEYOR 3


FRCH5553.EPS
DETAIL A
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E4
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13
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A
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6
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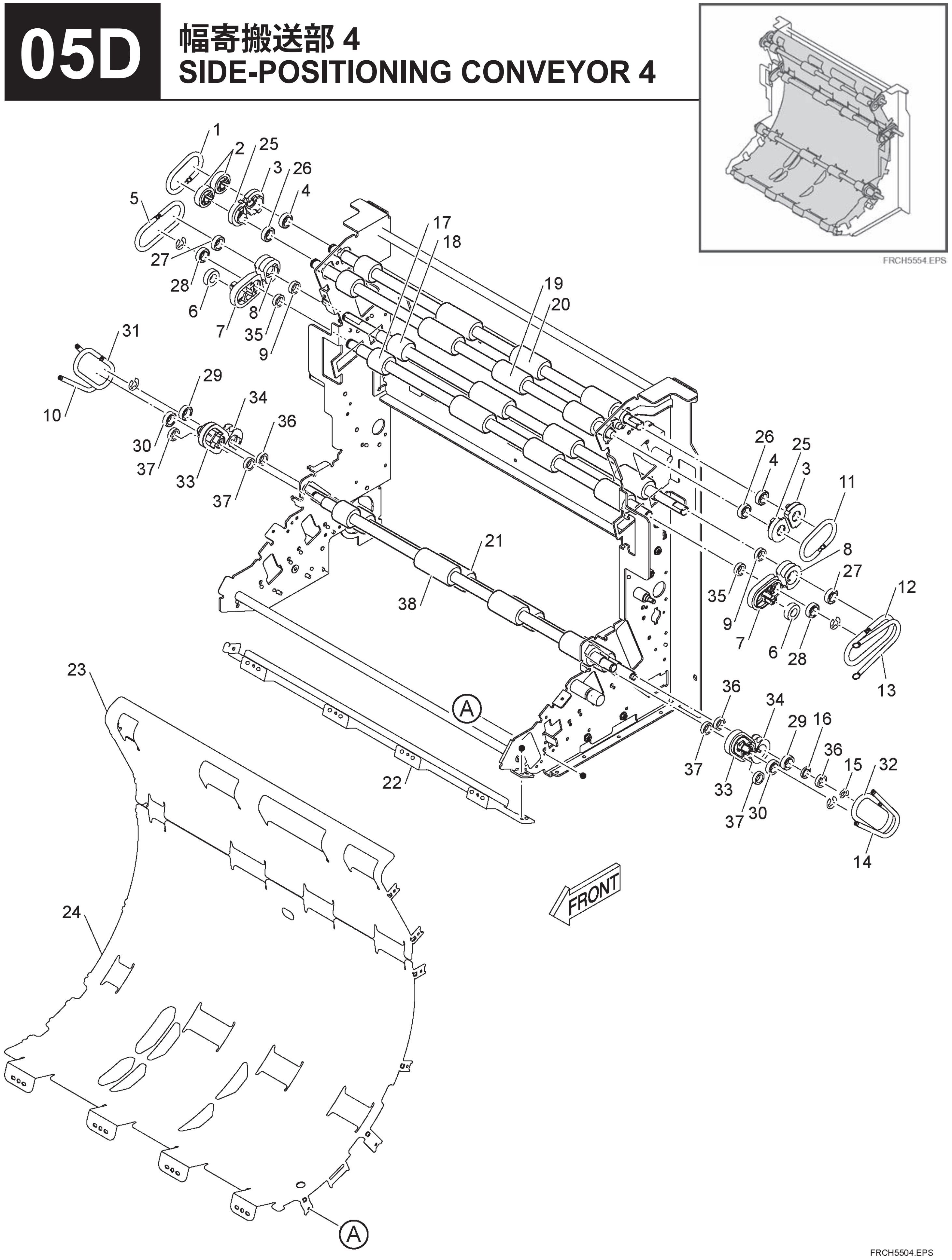
23
19
E4
A
14
DT3x6
B
26
25
24
E4
22
16
2-DT3x6
15
1
27
B
17
C
C
FRONT
FRCH5503.EPS

幅寄搬送部 3
SIDE-POSITIONING CONVEYOR 3 05C

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
D	1	324N3194D	タイミングベルト車	Timing Belt Pulley	2			☞ {MC:7.13}
D	2	323S3374	タイミングベルト	Timing Belt	1			☞ {MC:7.4}
E	3	347N1939	スペーサ	Spacer	1			☞ {MC:7.44}
D	4	322NB003	ころがり軸受	Ball Bearing	1			☞ {MC:7.44}
E	5	347N1624A	スペーサ	Spacer	1			☞ {MC:7.44}
D	6	315S0053	止め輪	Snap Ring	2			☞ {MC:7.14}
E	7	347N2034	スペーサ	Spacer	2			☞ {MC:7.14}
D	8	322SY303	すべり軸受	Plain Bearing	2			☞ {MC:7.14}
D	9	329N0178B	カム	Cam	1			☞ {MC:7.14}
D	10	388N5421	板バネ	Leaf Spring	1			☞ {MC:7.10}
D	11	322SP214	ころがり軸受	Ball Bearing	1			☞ {MC:7.16}
D	12	327N1102410C	平歯車	Spur Gear	1			☞ {MC:7.16}
D	13	315S0051	止め輪	Snap Ring	1			☞ {MC:7.16}
E	14	356N10199B	ブラケット	Bracket	1			☞ {MC:7.1}
D	15	118SX215	ステッピングモータ	Stepping Motor	1	MC1, STP-59D3002		☞ {MC:7.39}
E	16	356N10201C	ブラケット	Bracket	1			☞ {MC:7.1}
D	17	388N2613	バネ	Spring	1	L ≒ 35mm		☞ {MC:7.4}
D	18	324N0080	平ベルト車	Belt Pulley	1			☞ {MC:7.5}
D	19	324N3198	平ベルト車	Belt Pulley	1			☞ {MC:7.16}
D	20	322SY063	すべり軸受	Plain Bearing	2			☞ {MC:7.5}
E	21	341Y0334A	アーム	Arm	1			☞ {MC:7.5}
D	22	324N0080	平ベルト車	Belt Pulley	1			☞ {MC:7.4}
D	23	315S0051	止め輪	Snap Ring	1			☞ {MC:7.5}
E	24	347N1939	スペーサ	Spacer	1			☞ {MC:7.46}
D	25	322NB003	ころがり軸受	Ball Bearing	1			☞ {MC:7.46}
E	26	347N1624A	スペーサ	Spacer	1			☞ {MC:7.46}
D	27	315S0051	止め輪	Snap Ring	2			☞ {MC:7.13}

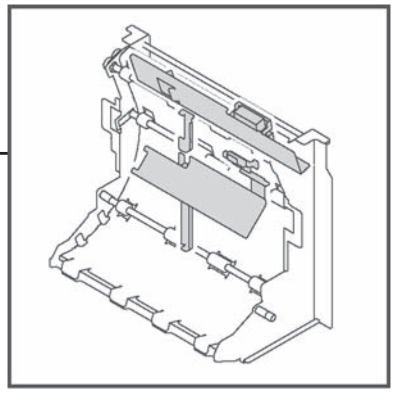
05D 幅寄搬送部 4 SIDE-POSITIONING CONVEYOR 4

幅寄搬送部 4
SIDE-POSITIONING CONVEYOR 4 05D



RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
D	1	388N2458A	引張コイルバネ	Extension Spring	1	L ≒ 61mm		☞ {MC:7.40}
D	2	327N1121608A	平歯車	Spur Gear	2			☞ {MC:7.40}
D	3	360N0542C	ハウジング	Housing	2			☞ {MC:7.42}
D	4	322NB002	ころがり軸受	Ball Bearing	2			☞ {MC:7.42}
D	5	388N2576B	バネ	Spring	1	L ≒ 130mm		☞ {MC:7.43}
D	6	322NB004	ころがり軸受	Ball Bearing	2			☞ {MC:7.43}
D	7	360N0521E	ハウジング	Housing	2			☞ {MC:7.43}
D	8	360N0543A	ハウジング	Housing	2			☞ {MC:7.44}
D	9	322NB003	ころがり軸受	Ball Bearing	2			☞ {MC:7.44}
D	10	388N2615A	引張コイルバネ	Extension Spring	1	L ≒ 72mm		☞ {MC:7.45}
D	11	388N2524A	引張コイルバネ	Extension Spring	1	L ≒ 80mm		☞ {MC:7.40}
D	12	388N2575B	バネ	Spring	1	L ≒ 127mm		☞ {MC:7.43}
D	13	388N2616	バネ	Spring	1	L ≒ 102mm		☞ {MC:7.43}
D	14	388N2614A	バネ	Spring	1	L ≒ 103mm		☞ {MC:7.45}
D	15	315S0050	止め輪	Snap Ring	1			☞ {MC:7.46}
E	16	347N1624A	スペーサ	Spacer	1			☞ {MC:7.46}
D	17	334N3625B	ゴムローラ	Rubber Roller	1			☞ {MC:7.43}
D	18	334N3624A	ゴムローラ	Rubber Roller	1			☞ {MC:7.44}
D	19	334N3623	ゴムローラ	Rubber Roller	1			☞ {MC:7.41}
D	20	334N3622A	ゴムローラ	Rubber Roller	1			☞ {MC:7.42}
D	21	334N3621	ゴムローラ	Rubber Roller	1			☞ {MC:7.46}
E	22	346N1405B	補強板	Reinforcement Plate	1			☞ {MC:7.49}
E	23	363N2792C	ガイド板	Guide Plate	1			☞ {MC:7.47}
E	24	363N2793F	ガイド	Guide	1			☞ {MC:7.48}
D	25	360N0542C	ハウジング	Housing	2			☞ {MC:7.41}
D	26	322NB002	ころがり軸受	Ball Bearing	2			☞ {MC:7.41}
D	27	322NB002	ころがり軸受	Ball Bearing	2			☞ {MC:7.44}
D	28	322NB002	ころがり軸受	Ball Bearing	2			☞ {MC:7.43}
D	29	322NB002	ころがり軸受	Ball Bearing	2			☞ {MC:7.46}
D	30	322NB002	ころがり軸受	Ball Bearing	2			☞ {MC:7.45}
D	31	388N2576B	バネ	Spring	1	L ≒ 130mm		☞ {MC:7.45}
D	32	388N2575B	バネ	Spring	1	L ≒ 127mm		☞ {MC:7.45}
D	33	360N0521E	ハウジング	Housing	2			☞ {MC:7.45}
D	34	360N0543A	ハウジング	Housing	2			☞ {MC:7.45}
D	35	322NB003	ころがり軸受	Ball Bearing	2			☞ {MC:7.43}
D	36	322NB003	ころがり軸受	Ball Bearing	3			☞ {MC:7.46}
D	37	322NB003	ころがり軸受	Ball Bearing	4			☞ {MC:7.45}
D	38	334N3625B	ゴムローラ	Rubber Roller	1			☞ {MC:7.45}

05E 幅寄搬送部 5 SIDE-POSITIONING CONVEYOR 5



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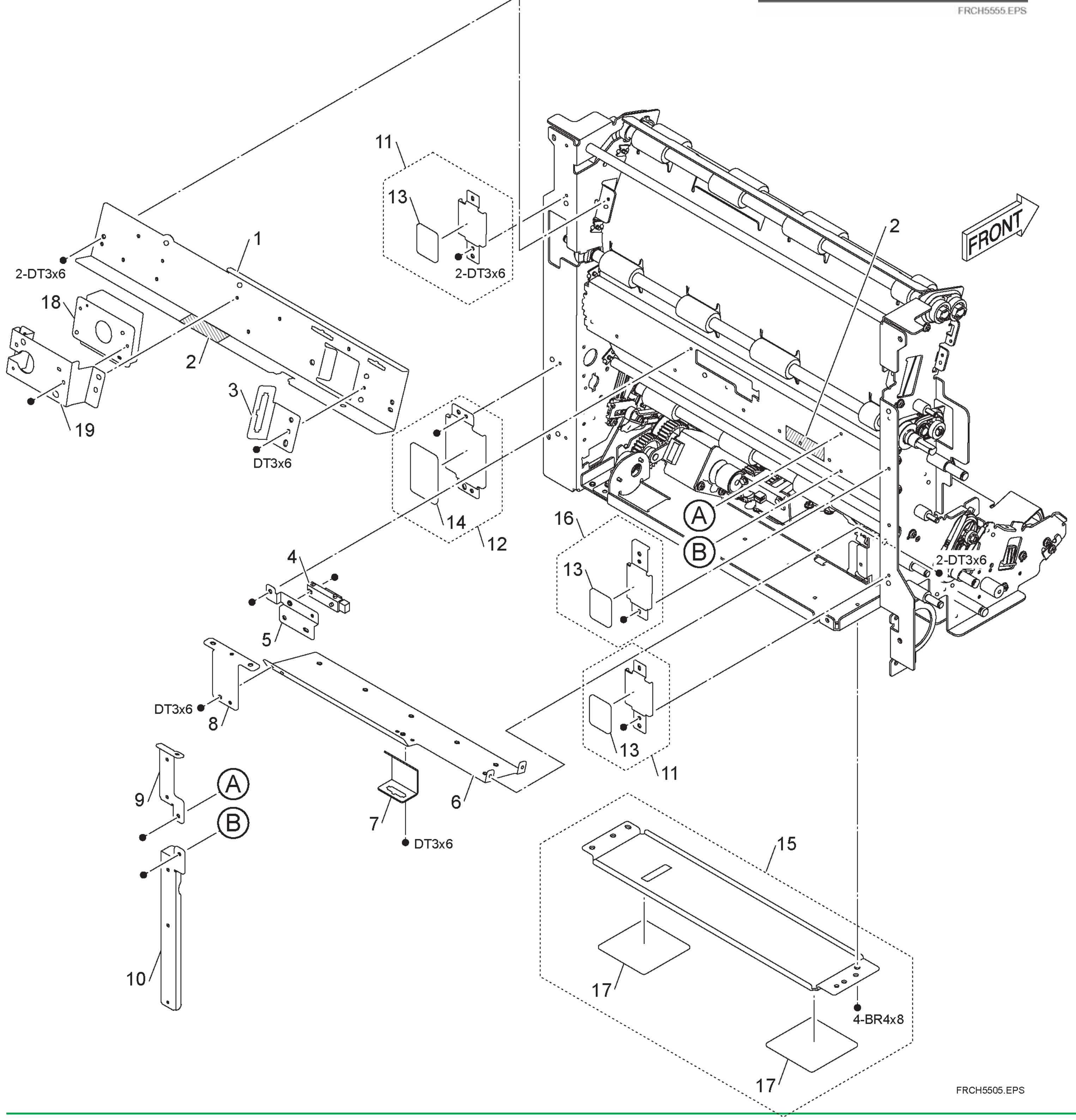
幅寄搬送部 5 SIDE-POSITIONING CONVEYOR 5 05E

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
E	1	356N9651F	ブラケット	Bracket	1			☞ {MC:7.1}
E	2	405N0186	銘板	Label	2			☞ {MC:7.1}
E	3	356N10305	ブラケット	Bracket	1			☞ {MC:7.1}
D	4	146N0010A	ホトインタラプタ	Photo Sensor	1	SC9		☞ {MC:7.18}
E	5	356N10261B	ブラケット	Bracket	1			☞ {MC:7.18}
E	6	356N10492D	ブラケット	Bracket	1			☞ {MC:7.1}
E	7	356N10493A	ブラケット	Bracket	1			☞ {MC:7.1}
E	8	356N10567B	ブラケット	Bracket	1			☞ {MC:7.1}
E	9	313N1310B	ステー	Bracket	1			☞ {MC:7.1}
E	10	313N1309B	ステー	Bracket	1			☞ {MC:7.20}
E	11	356Y0604	ブラケット	Bracket	2			☞ {MC:7.1}
E	12	356Y0605C	ブラケット	Bracket	1			☞ {MC:7.1}
D	13	386N1362	緩衝機材	Shock Absorber	3			☞ {MC:7.1}
E	14	386N1370	緩衝機材	Shock Absorber	1			☞ {MC:7.1}
E	15	356Y0607	ブラケット	Bracket	1			☞ {MC:7.1}
E	16	356Y0623	ブラケット	Bracket	1			☞ {MC:7.1}
D	17	386N1365	緩衝機材	Shock Absorber	2			☞ {MC:7.1}
D	18	852Y0074	読取り部	Bar Code Reader	1	BCRC1		☞ {MC:7.38}
E	19	356N9191	ブラケット	Bracket	1			☞ {MC:7.38}


11
13
2-DT3x6
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2-DT3x6
18
2
3
19
DT3x6
2
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12
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4
2-DT3x6
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DT3x6
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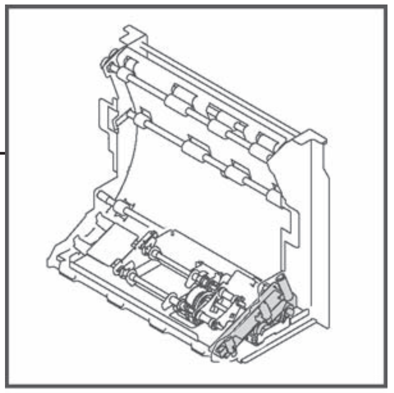
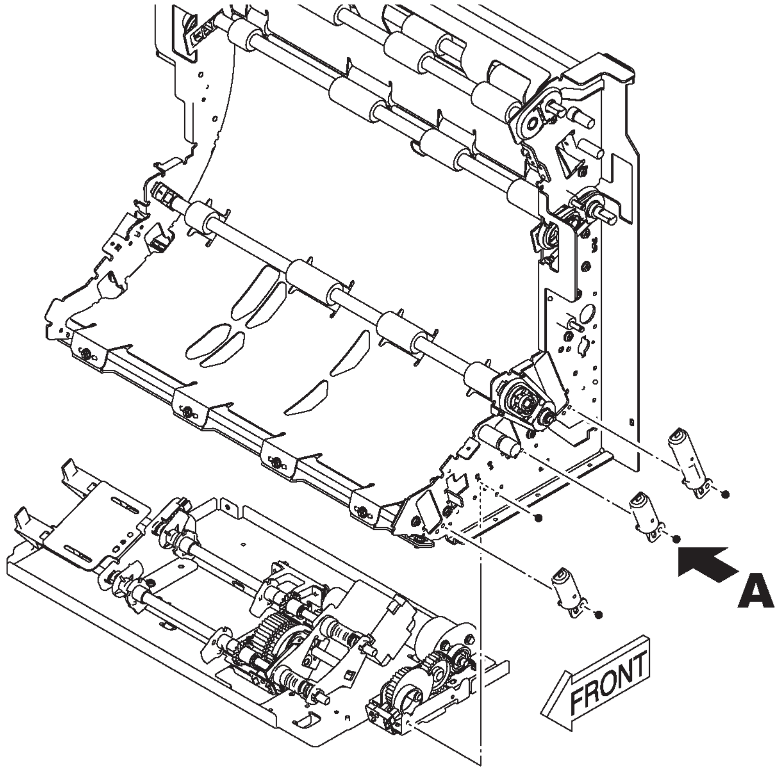
17

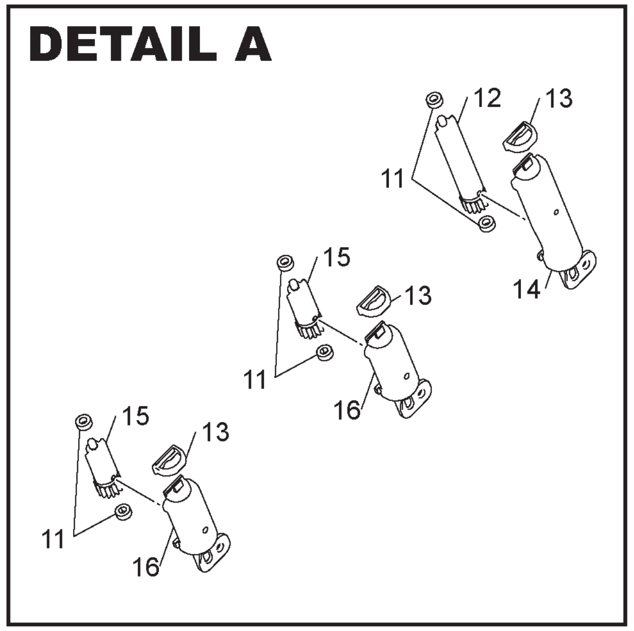
FRCH5505.EPS

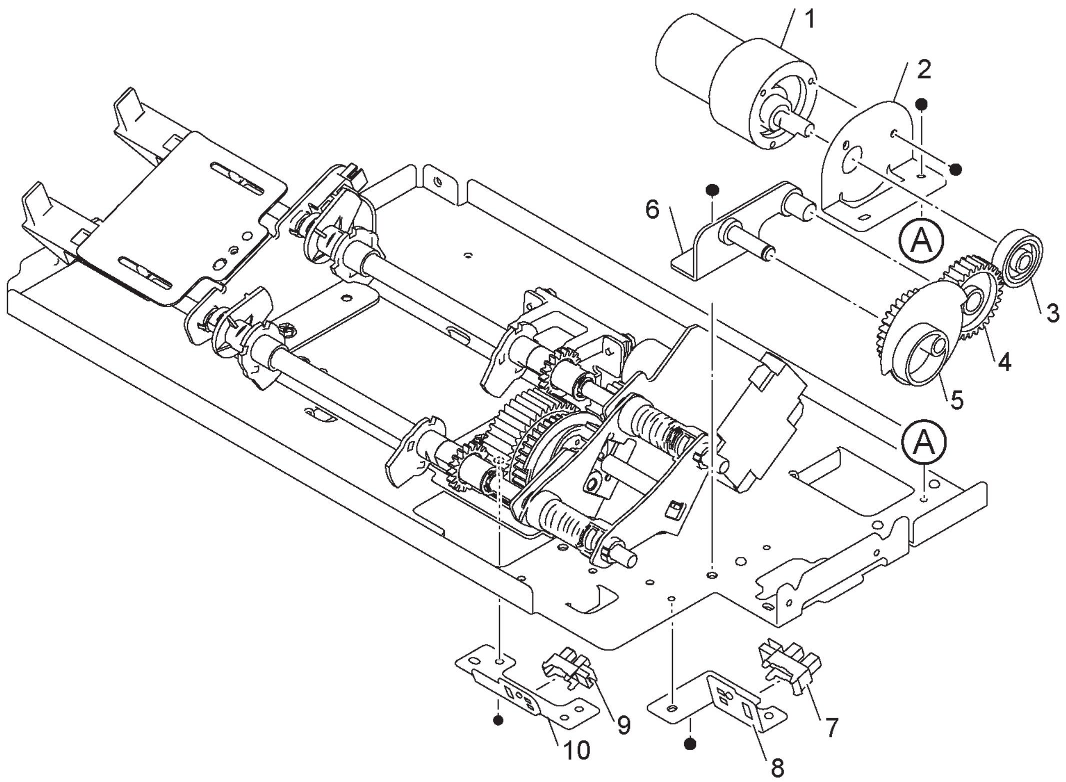
05F 幅寄搬送部 6
SIDE-POSITIONING CONVEYOR 6



FRCH5556.EPS







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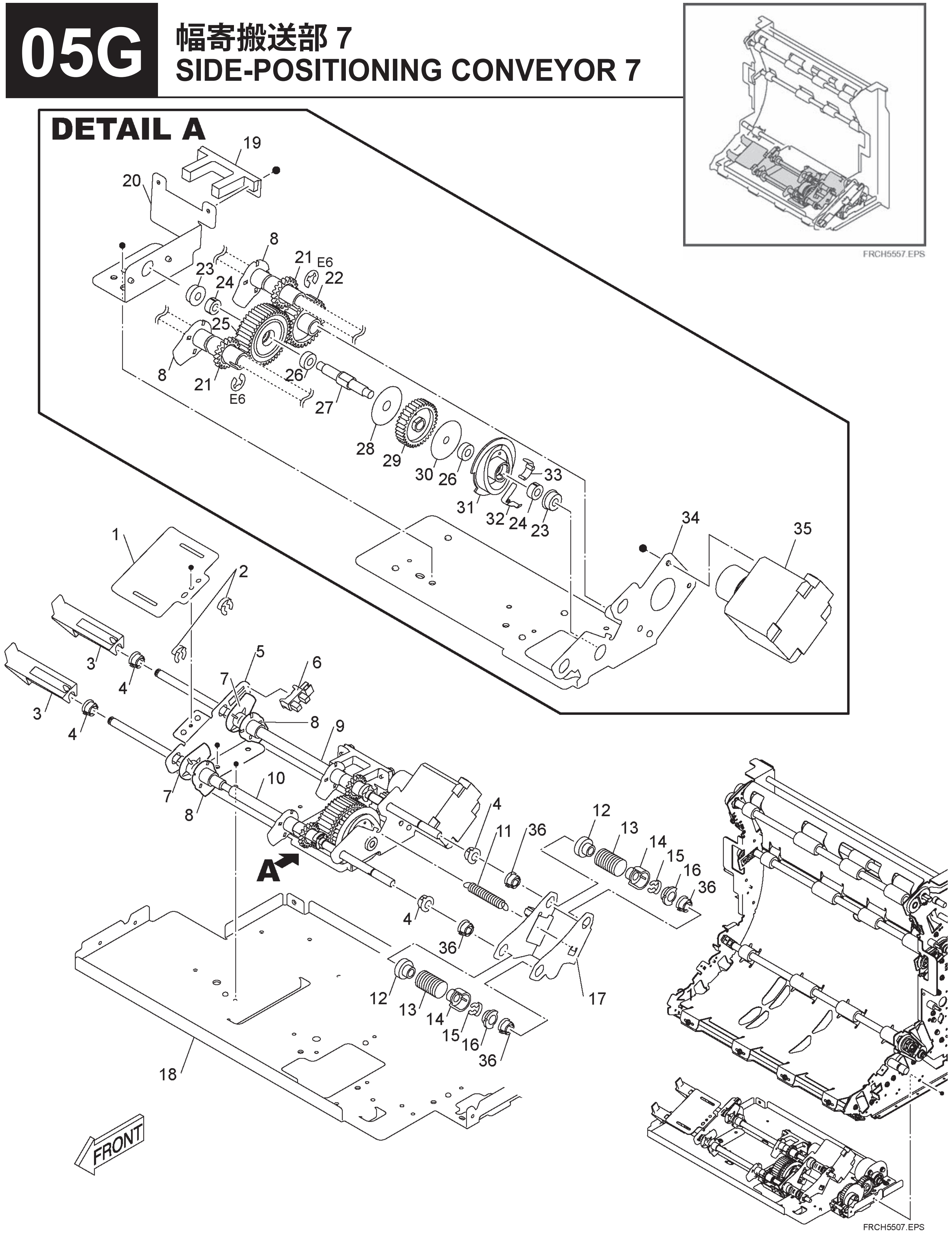
幅寄搬送部 6
SIDE-POSITIONING CONVEYOR 6 05F

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
D	1	118YX273B	モータ	Motor	1	MC4, RB-35CGM-J338		☞ {MC:7.26}
E	2	356N10196B	ブラケット	Bracket	1			☞ {MC:7.26}
D	3	327N0236D	平歯車	Spur Gear	1			☞ {MC:7.26}
D	4	327N1103008A	平歯車	Spur Gear	1			☞ {MC:7.27}
D	5	329N0177C	カム	Cam	1			☞ {MC:7.27}
E	6	356Y0416B	ブラケット	Bracket	1			☞ {MC:7.27}
D	7	146S0029A	ホトインタラプタ	Photo Sensor	1	SC7		☞ {MC:7.22}
D	8	356N10505B	ブラケット	Bracket	1			☞ {MC:7.22}
D	9	146S0029A	ホトインタラプタ	Photo Sensor	1	SC10		☞ {MC:7.23}
D	10	356N10495C	ブラケット	Bracket	1			☞ {MC:7.23}
D	11	322NB005	ころがり軸受	Ball Bearing	6			☞ {MC:7.19}
E	12	363N2725E	ガイド	Stopper	1			☞ {MC:7.19}
D	13	317N1074B	キャップ	Cap	3			☞ {MC:7.19}
D	14	360N0548C	ケーシング	Case	1			☞ {MC:7.19}
E	15	363N2724E	ガイド	Stopper	2			☞ {MC:7.19}
D	16	360N0547C	ケーシング	Case	2			☞ {MC:7.19}

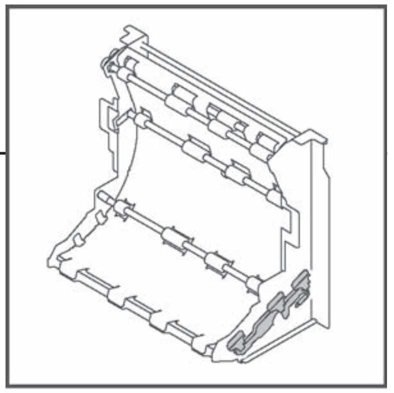
05G 幅寄搬送部 7
SIDE-POSITIONING CONVEYOR 7



幅寄搬送部 7 05G
SIDE-POSITIONING CONVEYOR 7

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
E	1	356N10256C	ブラケット	Bracket	1			☞ {MC:7.28}
D	2	315S0051	止め輪	Snap Ring	2			☞ {MC:7.35}
E	3	341N1189D	アーム	Arm	2			☞ {MC:7.28}
D	4	322SY322	すべり軸受	Plain Bearing	4			☞ {MC:7.34}
E	5	356N10152A	ブラケット	Bracket	1			☞ {MC:7.33}
D	6	146S0029A	ホトインタラプタ	Photo Sensor	1	SC6		☞ {MC:7.31}
E	7	341N1188E	アーム	Arm	2			☞ {MC:7.35}
E	8	341N1184C	アーム	Arm	4			☞ {MC:7.35}
E	9	319N4289E	軸	Shaft	1			☞ {MC:7.35}
E	10	319N4452A	軸	Shaft	1			☞ {MC:7.35}
D	11	388N2610	引張コイルバネ	Extension Spring	1	L ≒ 26mm		☞ {MC:7.29}
D	12	360N0537B	ハウジング	Housing	2			☞ {MC:7.30}
D	13	388N1243	圧縮コイルバネ	Compression Coil Spring	2	L ≒ 30mm		☞ {MC:7.30}
D	14	360N0553A	ハウジング	Housing	2			☞ {MC:7.30}
D	15	315S0050	止め輪	Snap Ring	2			☞ {MC:7.29}
D	16	347N2082B	スペーサ	Spacer	2			☞ {MC:7.30}
D	17	368Y0027B	摺動台	Slider	1			☞ {MC:7.30}
E	18	355N0752F	フレーム	Frame	1			–
D	19	146N0016A	ホトインタラプタ	Photo Sensor	1	SC8		☞ {MC:7.32}
D	20	356Y0454	ブラケット	Bracket	1			☞ {MC:7.37}
D	21	327N0234B	平歯車	Spur Gear	2			☞ {MC:7.35}
D	22	327N0233	平歯車	Spur Gear	1			☞ {MC:7.37}
D	23	322SF155	軸受	Bearing	2			☞ {MC:7.37}
D	24	330S0013	クラッチ	Clutch	2			☞ {MC:7.37}
D	25	327Y0017	平歯車	Spur Gear	1			☞ {MC:7.37}
D	26	322NB006	ころがり軸受	Ball Bearing	2			☞ {MC:7.37}
E	27	319N4293D	軸	Shaft	1			☞ {MC:7.37}
D	28	347N2068A	スペーサ	Spacer	1			☞ {MC:7.37}
D	29	327N0232B	平歯車	Spur Gear	1			☞ {MC:7.37}
D	30	347N2067B	スペーサ	Spacer	1			☞ {MC:7.37}
D	31	329N0176D	カム	Cam	1			☞ {MC:7.37}
D	32	388Y5010A	板バネ	Leaf Spring	1			☞ {MC:7.37}
D	33	341N1203A	アーム	Arm	1			☞ {MC:7.37}
E	34	356Y0409E	ブラケット	Bracket	1			☞ {MC:7.37}
D	35	118SX214	ステッピングモータ	Stepping Motor	1	MC3, STP-42D2046		☞ {MC:7.36}
D	36	322SY322	すべり軸受	Plain Bearing	4			☞ {MC:7.30}

05H 幅寄搬送部 8
SIDE-POSITIONING CONVEYOR 8



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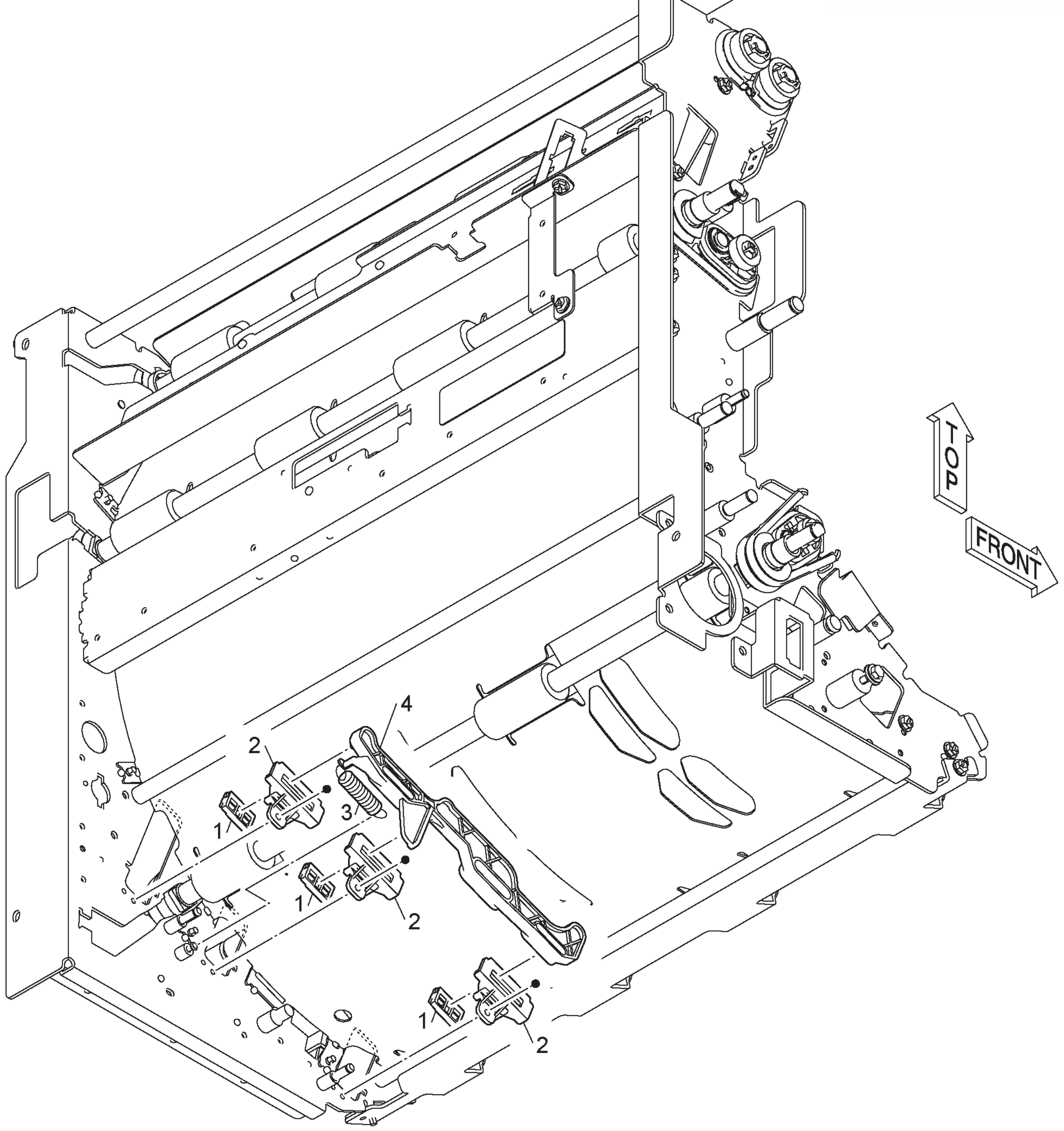

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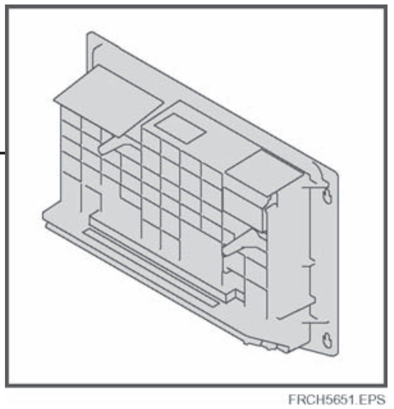
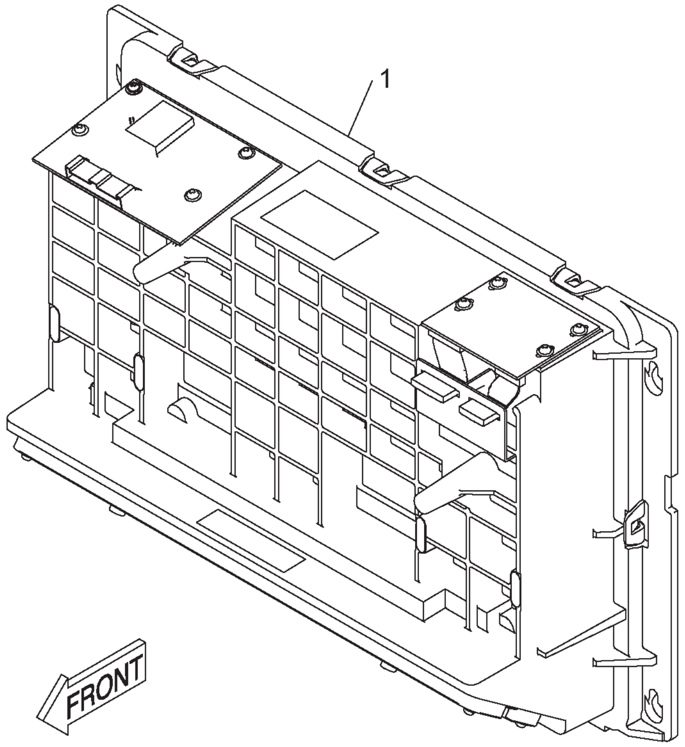
幅寄搬送部 8
SIDE-POSITIONING CONVEYOR 8 05H

RANK	REF.	PART NO.	PART NAME	QTY.	REMARKS	SERIAL NO.	REFER TO
D	1	363N2826A	ガイド Guide	3			☞ {MC:7.25}
D	2	327N0237B	ラック Rack	3			☞ {MC:7.25}
D	3	388N2621C	引張コイルバネ Extension Spring	1	L ≒ 35mm		☞ {MC:7.25}
D	4	363N2825B	ガイド Guide	1			☞ {MC:7.25}

06 光学部 SCANNING OPTICS UNIT





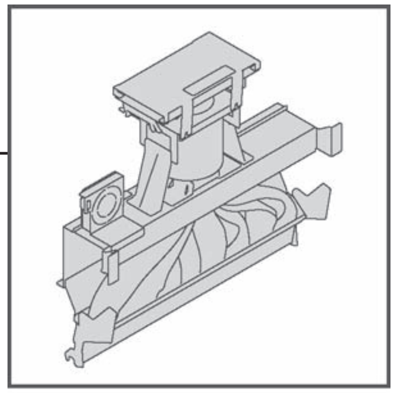
FRCH5601.EPS

光学部 SCANNING OPTICS UNIT 06

RANK	REF.	PART NO.	PART NAME	QTY.	REMARKS	SERIAL NO.	REFER TO
DR	1	839Y0068	光学部 Scanning Optics Unit	1			☞ {MC:9.}

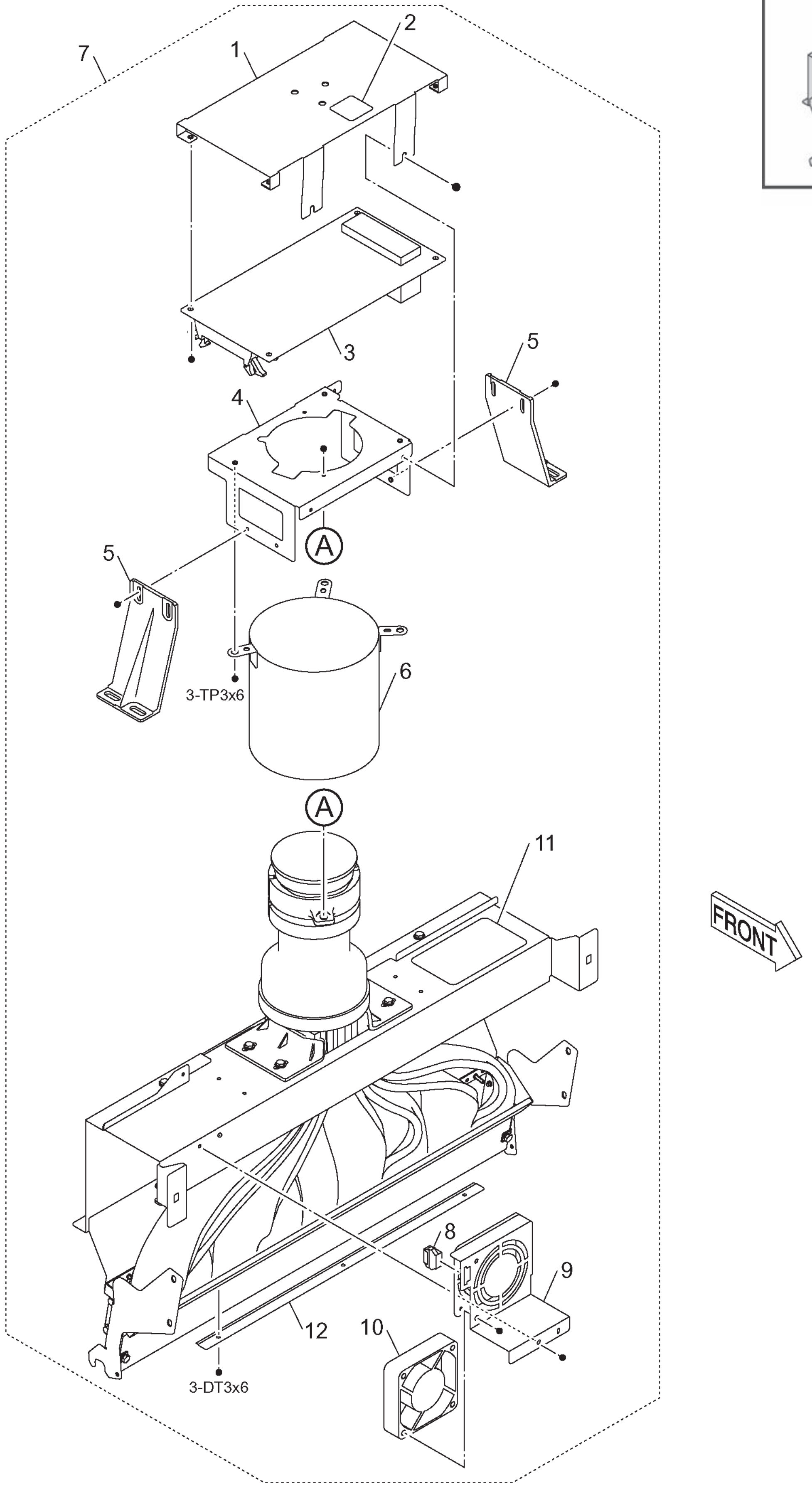
07

集光部
LIGHT-COLLECTING UNIT



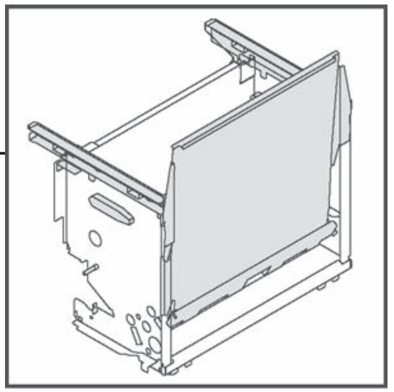
集光部
LIGHT-COLLECTING UNIT
07

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
D	1	345N1723C	シールド材	Shielding Tape	1			☞ {MC:8.2}
E	2	405N3486	銘板	Label	1			☞ {MC:8.2}
D	3	113Y1737D	PMT23A	PMT23A	1			☞ {MC:8.2}
D	4	345N1724C	シールド材	Shielding Tape	1			☞ {MC:8.3}
D	5	335N0091D	フランジ	Flange	2			☞ {MC:8.3}
D	6	345N1663A	シールド材	Shielding Tape	1			☞ {MC:8.3}
E	7	815Y0072	集光ガイド	Light-Collecting Unit	1			☞ {MC:8.1}
D	8	120S4293	コネクタ	Connector	1			☞ {MC:4.3}
E	9	356N10089A	ブラケット	Bracket	1			☞ {MC:4.3}
D	10	119S0049	電動ファン	Fan	1	FANG1		☞ {MC:4.3}
E	11	405N3485	銘板	Label	1			☞ {MC:8.1}
D	12	387N0197	帯電防止材	Antistatic Brush	1			☞ {MC:8.1}



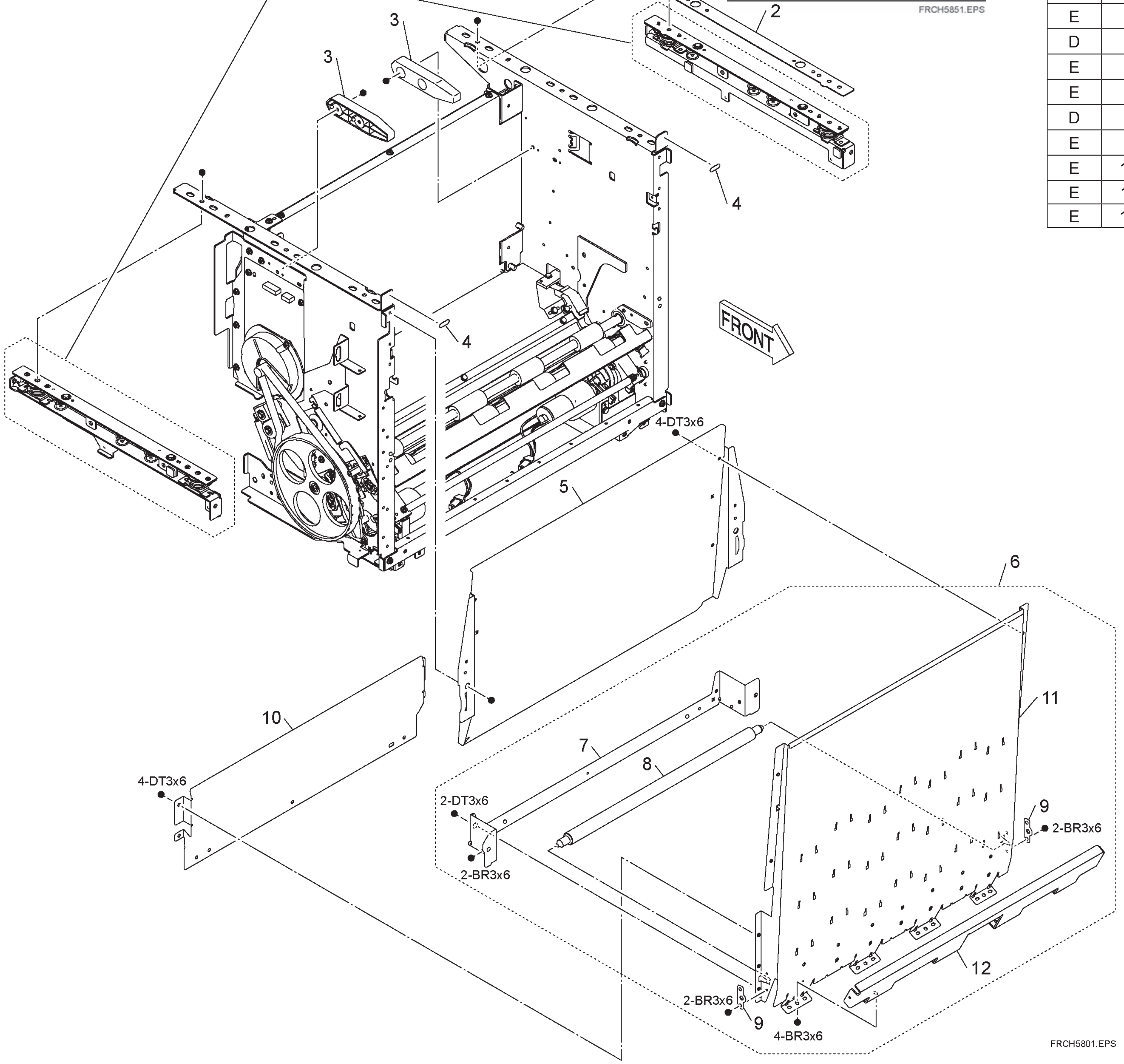
FRCH5701.EPS

08A 副走査部 1 SUB SCANNING UNIT 1



FRCH5851.EPS

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
E	1	898Y1311	防振ゴムアセンブリ	Vibration Proof Rubber Assembly	1	2ヶ組／ A set of two		☞ {MC:10.33}
D	2	347N1950E	スペーサ	Spacer	1			☞ {MC:10.33}
E	3	365N0114A	レール	Rail	2			－
E	4	405N1880	銘板	Label	2			☞ {MC:10.1}
D	5	363N2699D	ガイド	Guide	1			☞ {MC:10.2}
E	6	363Y0565B	ガイド板	Guide Plate	1			☞ {MC:10.2}
E	7	356N9824E	ブラケット	Bracket	1			☞ {MC:10.2}
D	8	334Y2256	ローラ	Roller	1			☞ {MC:10.2}
E	9	356N10786A	ブラケット	Bracket	2			☞ {MC:10.2}
E	10	363N2849	ガイド	Guide	1			☞ {MC:10.2}
E	11	363Y0557B	ガイド板	Guide Plate	1			☞ {MC:10.2}
E	12	346N1475B	補強板	Plate Support	1			☞ {MC:10.2}


1
2
3
3
4
4
FRONT
4-DT3x6
5
6
11
10
4-DT3x6
7
8
2-DT3x6
9
2-BR3x6
2-BR3x6
12
2-BR3x6
9
4-BR3x6

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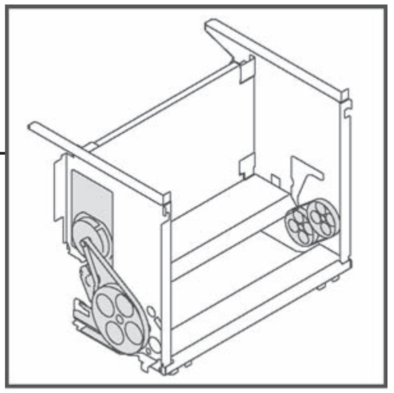
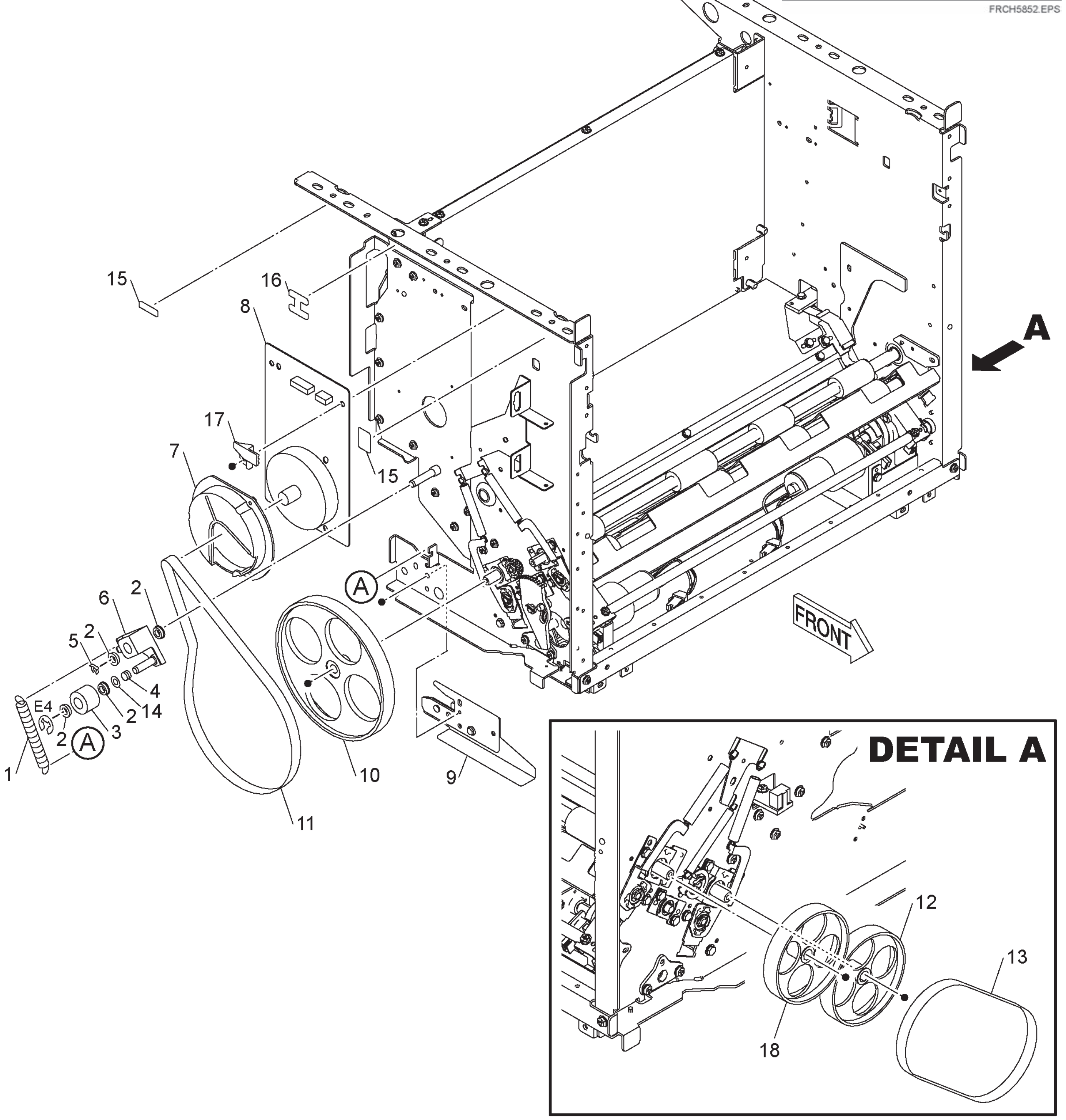
08B 副走査部 2 SUB SCANNING UNIT 2





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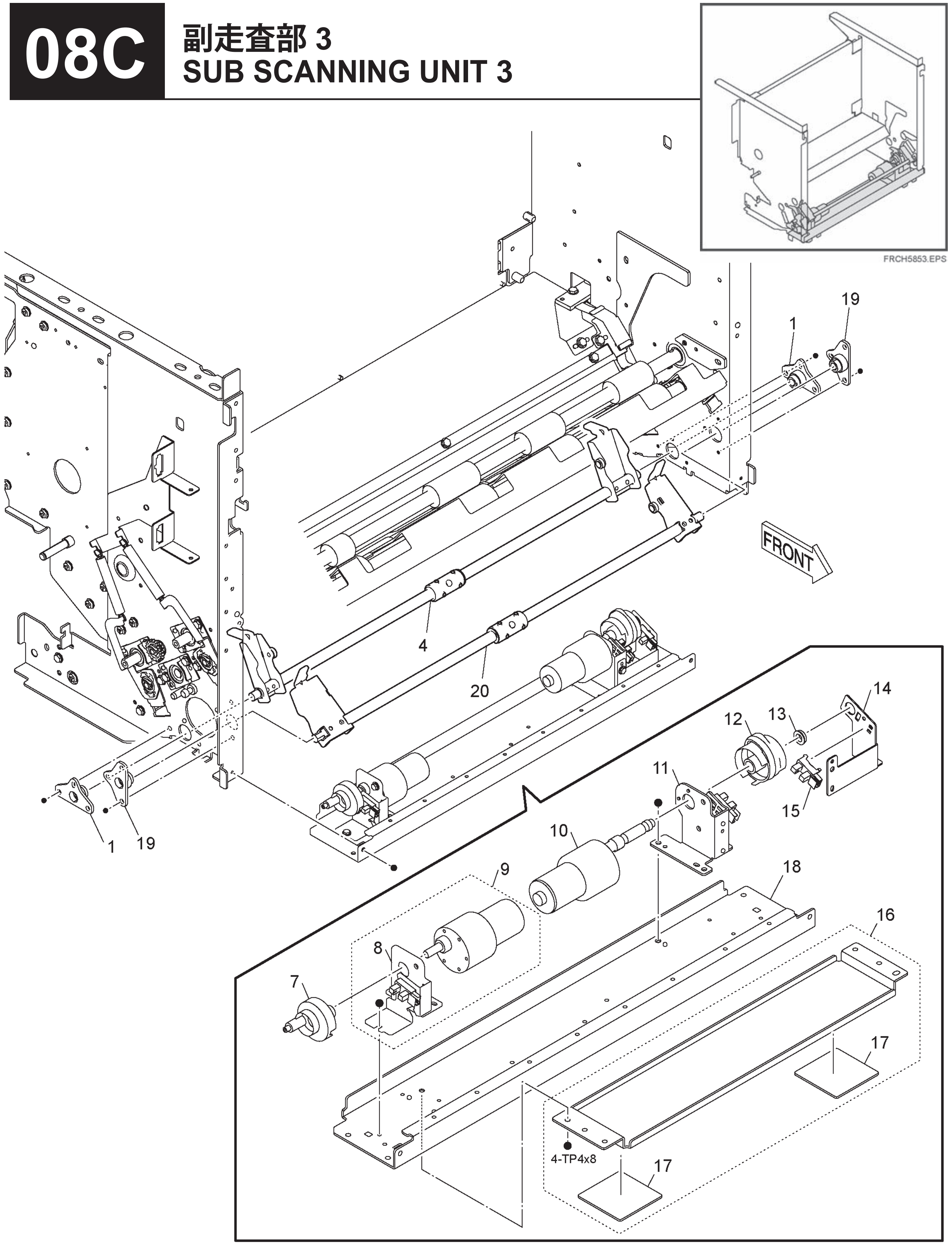
副走査部 2 SUB SCANNING UNIT 2 08B

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
D	1	388N2570	引張りコイルバネ	Extension Spring	1	L ≒ 59mm		☞ {MC:10.6}
D	2	322SP211	ころがり軸受	Ball Bearing	4			☞ {MC:10.8}
D	3	334N0068A	ローラ	Roller	1			☞ {MC:10.8}
D	4	388N1234	圧縮コイルバネ	Compression Coil Spring	1	L ≒ 7mm		☞ {MC:10.8}
D	5	315S0050	止め輪	Snap Ring	1			☞ {MC:10.8}
E	6	341Y0352	アーム	Arm	1			☞ {MC:10.8}
E	7	350N2924C	カバー	Cover	1			☞ {MC:10.9}
D	8	118YX256	FFM モータ	FFM Motor	1	MZ1, ME8880		☞ {MC:10.9}
E	9	356Y0415B	ブラケット	Bracket	1			☞ {MC:10.36}
D	10	337N0071B	ホイール	Flywheel	1			☞ {MC:10.7}
E	11	323N1262A	ベルト	Belt	1			☞ {MC:10.6}
D	12	337N0070A	ホイール	Flywheel	1			☞ {MC:10.4}
E	13	323N1266	ベルト	Belt	1			☞ {MC:10.3}
D	14	309S0077	座金	Washer	1			☞ {MC:10.8}
D	15	384N0104	こすり部材	Tape	2			–
D	16	386N1377	緩衝機材	Shock Absorber	1			–
E	17	350N3329B	カバー	Cover	1			☞ {MC:10.9}
D	18	337N0070A	ホイール	Flywheel	1			☞ {MC:10.5}

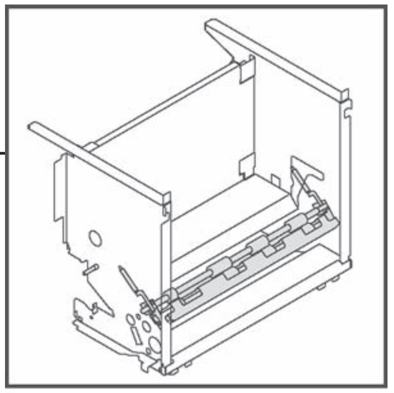
08C 副走査部 3 SUB SCANNING UNIT 3



副走査部 3 SUB SCANNING UNIT 3 08C

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
D	1	360N0508A	ハウジング	Housing	2			☞ {MC:10.30}
	2	***						
	3	***						
E	4	341Y0412	アーム	Arm	1			☞ {MC:10.30}
	5	***						
	6	***						
E	7	341N1124C	アーム	Arm	1			☞ {MC:10.26}
D	8	146Y0141	ホトインタラプタ	Photo Sensor Assembly	1	SZ5		☞ {MC:10.29}
D	9	118YX280	モータ	Motor Assembly	1	MZ3, RB-35CGM -J338-24		☞ {MC:10.29}
D	10	118YX276A	モータ	Motor	1	MZ2, RB-35CGM -J338-24		☞ {MC:10.28}
D	11	146Y0142	ホトインタラプタ	Photo Sensor Assembly	1	SZ3		☞ {MC:10.28}
D	12	329N0171D	カム	Cam	1			☞ {MC:10.28}
D	13	322SP211	ころがり軸受	Ball Bearing	1			☞ {MC:10.27}
E	14	356N9661B	ブラケット	Bracket	1			☞ {MC:10.27}
D	15	146S0029A	ホトインタラプタ	Photo Sensor	1	SZ2		☞ {MC:10.27}
E	16	356Y0615	ブラケット	Bracket	1			☞ {MC:10.1}
E	17	386N1365	緩衝機材	Shock Absorber	2			☞ {MC:10.1}
E	18	313N1263C	ステー	Stay	1			☞ {MC:10.26}
D	19	360N0508A	ハウジング	Housing	2			☞ {MC:10.31}
E	20	341Y0412	アーム	Arm	1			☞ {MC:10.31}

08D 副走査部 4 SUB SCANNING UNIT 4



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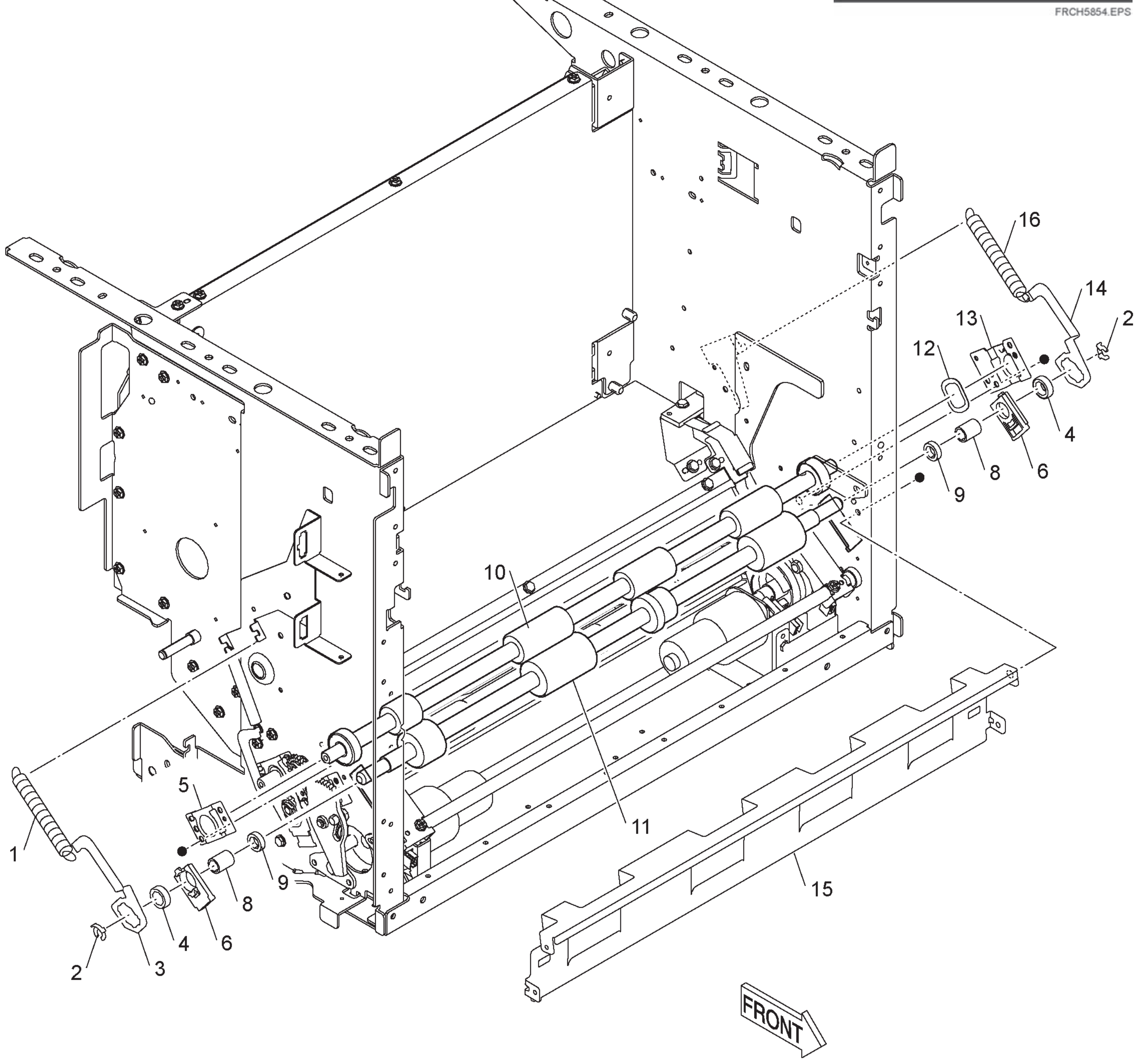

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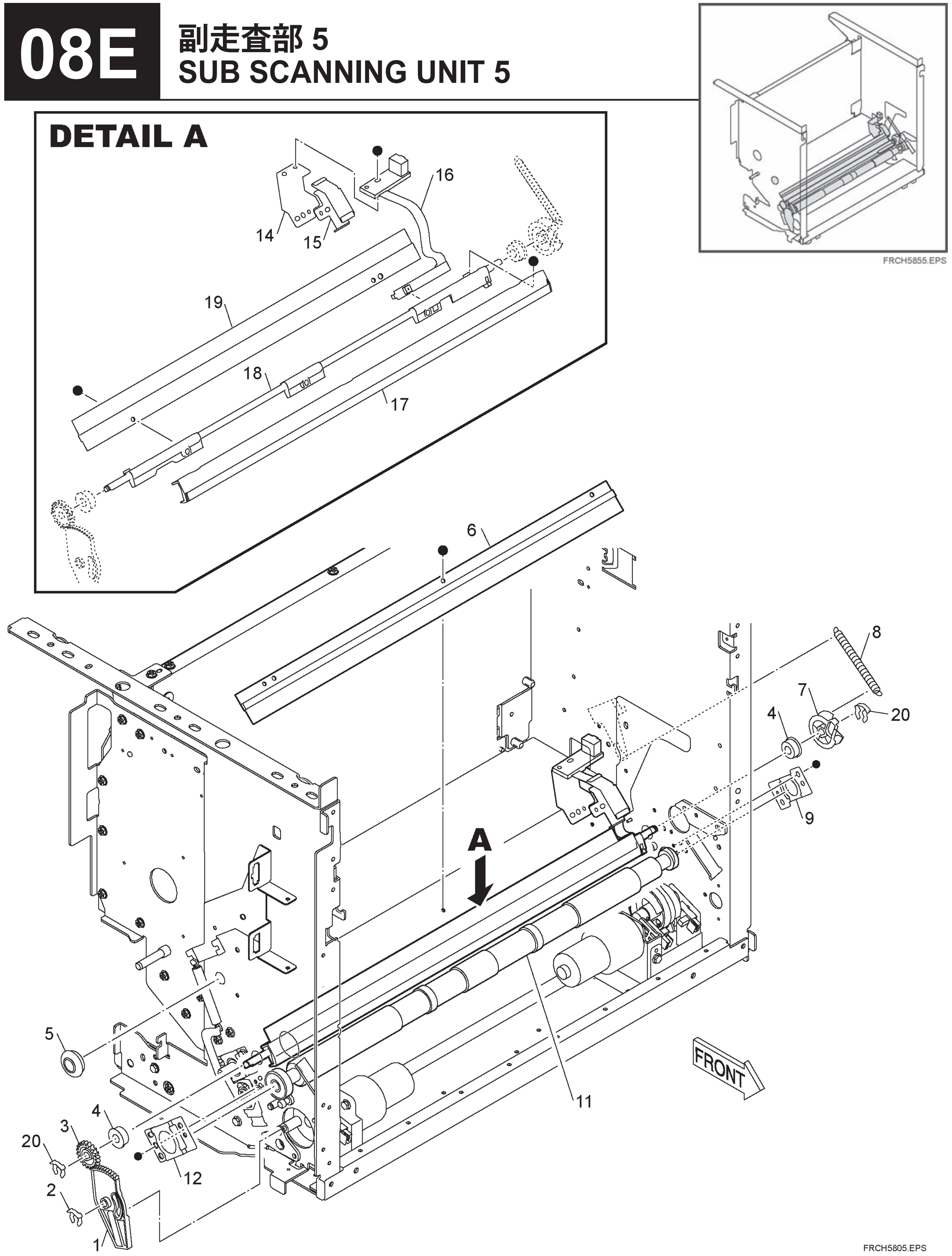
08D 副走査部 4 SUB SCANNING UNIT 4

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
D	1	388N2569A	引張りコイルバネ	Extension Spring	1	L ≒ 47mm		☞ {MC:10.13}
D	2	315S0050	止め輪	Snap Ring	2			☞ {MC:10.19}
D	3	343N0068A	フック	Hook	1			☞ {MC:10.13}
D	4	322NB002	ころがり軸受	Ball Bearing	2			☞ {MC:10.19}
E	5	356N10090A	ブラケット	Bracket	1			☞ {MC:10.14}
D	6	360N0494B	ハウジング	Housing	2			☞ {MC:10.19}
	7	***						
E	8	347N1944A	スペーサ	Spacer	2			☞ {MC:10.19}
D	9	322NB003	軸受	Bearing	2			☞ {MC:10.19}
D	10	334Y3229	ゴムローラ	Rubber Roller	1			☞ {MC:10.14}
D	11	334N3614B	ゴムローラ	Rubber Roller	1			☞ {MC:10.19}
D	12	309S0025	座金	Washer	1			☞ {MC:10.35}
E	13	356N10086	ブラケット	Bracket	1			☞ {MC:10.35}
D	14	343N0069A	フック	Hook	1			☞ {MC:10.11}
D	15	363N2664B	ガイド	Guide	1			☞ {MC:10.16}
D	16	388N2569A	引張りコイルバネ	Extension Spring	1	L ≒ 47mm		☞ {MC:10.11}

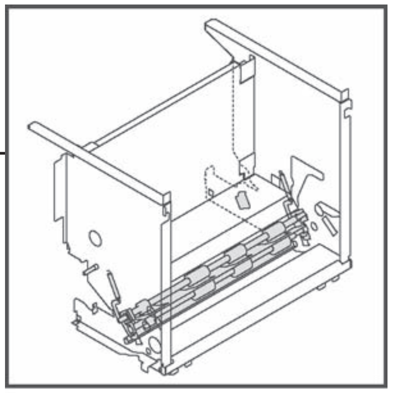
08E 副走査部 5
SUB SCANNING UNIT 5



RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
D	1	327N0213C	歯車	Gear	1			☞ {MC:10.20}
D	2	315S0050	止め輪	Snap Ring	1			☞ {MC:10.20}
D	3	327N0214B	歯車	Gear	1			☞ {MC:10.21}
D	4	322SF155	軸受	Bearing	2			☞ {MC:10.21}
D	5	318S3060	グロメット	Grommet	1			—
D	6	387N0189	帯電防止材	Antistatic Brush	1			☞ {MC:10.32}
D	7	363N2060C	ガイド	Guide	1			☞ {MC:10.21}
D	8	388N2435	引張りコイルバネ	Extension Spring	1	L ≒ 41mm		☞ {MC:10.21}
E	9	356N10091A	ブラケット	Bracket	1			☞ {MC:10.34}
	10	***						
D	11	334Y3228B	ゴムローラ	Rubber Roller	1			☞ {MC:10.25}
E	12	356N10090A	ブラケット	Bracket	1			☞ {MC:10.25}
	13	***						
E	14	356N10562	ブラケット	Bracket	1			—
E	15	356N9665B	ブラケット	Bracket	1			—
D	16	113Y1738C	SED23A	SED23A	1	SZ1		☞ {MC:10.24}
D	17	602Y0132	ミラー	Mirror	1			☞ {MC:10.22}
E	18	319N4263A	軸	Shaft	1			☞ {MC:10.21}
D	19	387N0170B	帯電防止材	Antistatic Brush	1			☞ {MC:10.23}
D	20	315S0050	止め輪	Snap Ring	2			☞ {MC:10.21}

08F

副走査部 6
SUB SCANNING UNIT 6



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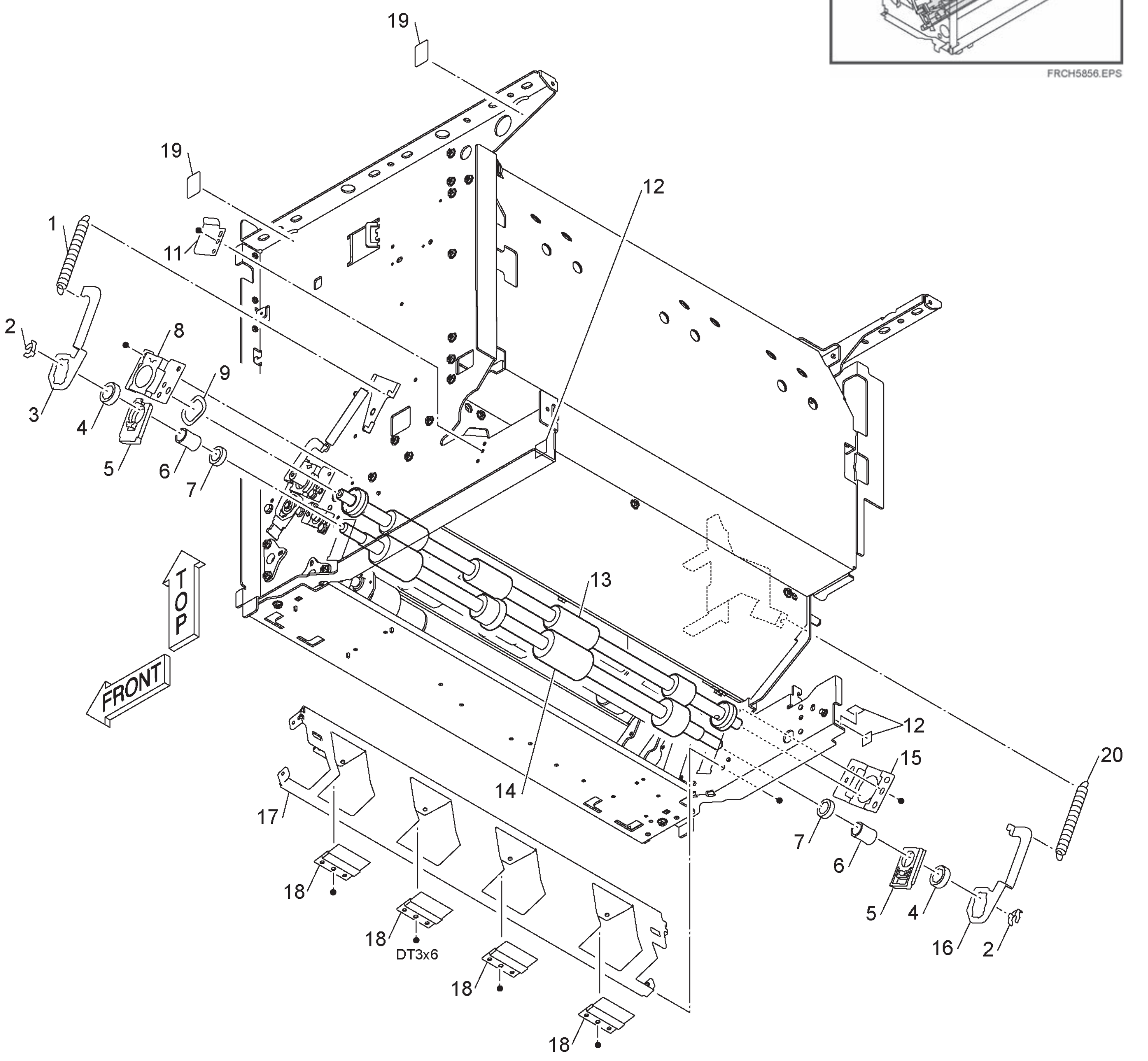
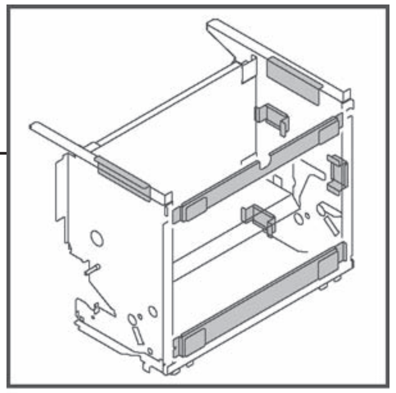
副走査部 6
SUB SCANNING UNIT 6
08F

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
D	1	388N2569A	引張りコイルバネ	Extension Spring	1	L ≒ 47mm		☞ {MC:10.10}
D	2	315S0050	止め輪	Snap Ring	2			☞ {MC:10.18}
D	3	343N0068A	フック	Hook	1			☞ {MC:10.10}
D	4	322NB002	ころがり軸受	Ball Bearing	2			☞ {MC:10.18}
D	5	360N0494B	ハウジング	Housing	2			☞ {MC:10.18}
E	6	347N1944A	スペーサ	Spacer	2			☞ {MC:10.18}
D	7	322NB003	軸受	Bearing	2			☞ {MC:10.18}
E	8	356N10086	ブラケット	Bracket	1			☞ {MC:10.34}
D	9	309S0025	座金	Washer	1			☞ {MC:10.34}
	10	***						
E	11	356N10200A	ブラケット	Bracket	1			☞ {MC:10.1}
E	12	386N1292B	緩衝機材	Shock Absorber	3			—
D	13	334Y3229	ゴムローラ	Rubber Roller	1			☞ {MC:10.15}
D	14	334N3614B	ゴムローラ	Rubber Roller	1			☞ {MC:10.18}
E	15	356N10090A	ブラケット	Bracket	1			☞ {MC:10.15}
D	16	343N0069A	フック	Hook	1			☞ {MC:10.12}
D	17	363N2620D/E	ガイド	Guide	1			☞ {MC:10.17}
D	18	387N0198A	帯電防止材	Antistatic Brush	4			☞ {MC:10.17}
D	19	384N0104	こすり部材	Tape	2			—
D	20	388N2569A	引張りコイルバネ	Extension Spring	1	L ≒ 47mm		☞ {MC:10.12}



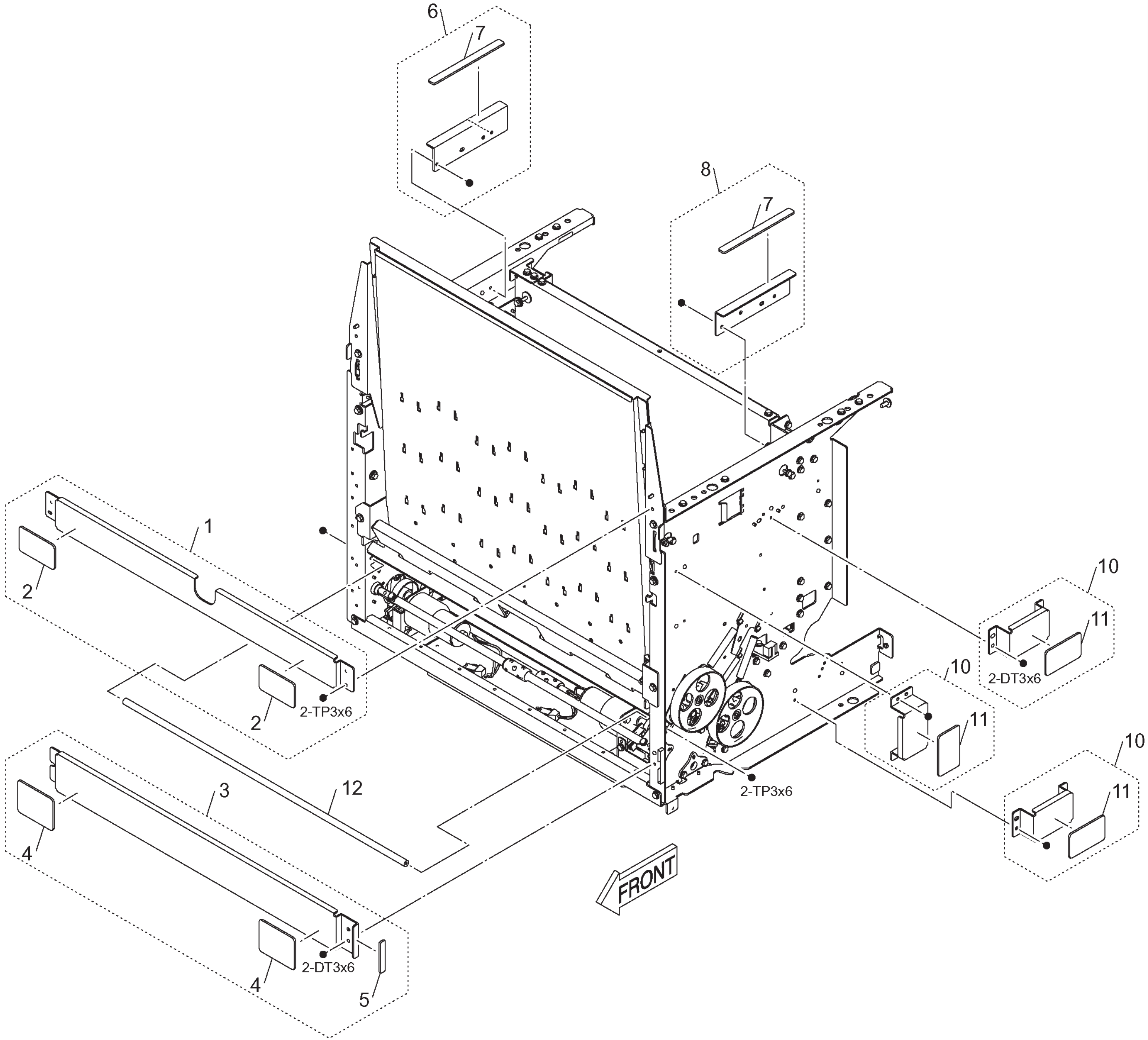
FRCH5806.EPS

08G 副走査部 7 SUB SCANNING UNIT 7

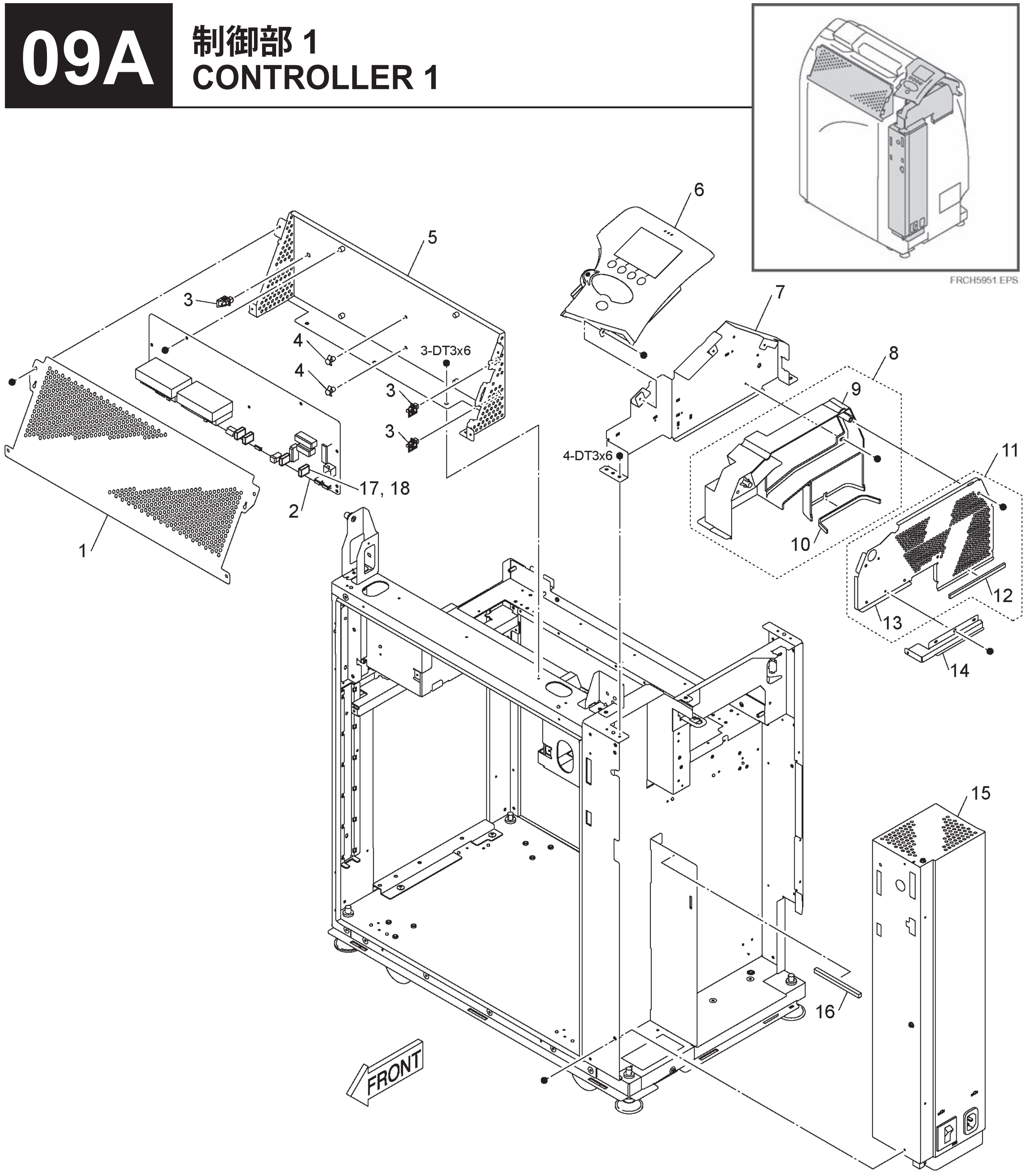

FRCH5857.EPS

副走査部 7 SUB SCANNING UNIT 7 08G

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
E	1	356Y0613A	ブラケット	Bracket	1			–
D	2	386N1366	緩衝機材	Shock Absorber	2			–
E	3	356Y0608A	ブラケット	Bracket	1			–
D	4	386N1363	緩衝機材	Shock Absorber	2			–
D	5	386N1380	緩衝機材	Shock Absorber	1			–
E	6	356Y0622A	ブラケット	Bracket	1			☞ {MC:10.1}
D	7	386N1369	緩衝機材	Bracket	2			☞ {MC:10.1}
E	8	356Y0612	ブラケット	Bracket	1			☞ {MC:10.1}
	9	***						
E	10	356Y0609	ブラケット	Shock Absorber	3			☞ {MC:10.1}
D	11	386N1370	緩衝機材	Rubber Roller	3			☞ {MC:10.1}
E	12	313N1315	ステー	Stay	1			–


6
7
8
7
1
2
2
2-TP3x6
3
12
4
4
2-DT3x6
5
10
11
2-DT3x6
10
11
10
11
2-TP3x6
FRONT
FRCH5807.EPS

09A 制御部 1 CONTROLLER 1



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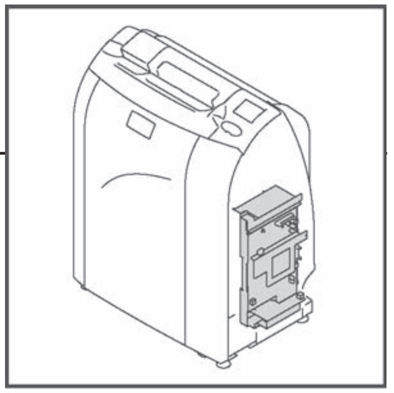
FRCH5901.EPS

制御部 1 CONTROLLER 1 09A

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
E	1	350N2998C	カバー	Cover	1			☞ {MC:11.6}
CR	2	113Y1758D	SND23B	SND23B	1			☞ {MC:11.6}
D	3	316S0456	止め具	Clamp	3			☞ {MC:11.6}
D	4	316S0268	止め具	Clamp	2			☞ {MC:11.6}
E	5	358Y0086B	ボックス	Box	1			☞ {MC:11.6}
CR	6.1	845Y0116B	操作パネル	Panel	1	PNL23A Except for USA		☞ {MC:4.1}
CR	6.2	845Y0127B	操作パネル	Panel	1	PNL23A For USA		☞ {MC:4.1}
E	7	356N10180D	ブラケット	Bracket	1			☞ {MC:4.5}
E	8	369Y0029C	ダクト	Duct	1			☞ {MC:4.5}
E	9	369N0279E	ダクト	Duct	1			☞ {MC:4.5}
D	10	382N1758	テープ	Tape	1			☞ {MC:4.5}
E	11	364Y0018A	ガード	Guard	1			☞ {MC:4.5}
D	12	382N1759	テープ	Tape	1			☞ {MC:4.5}
E	13	364N0114C	ガード	Guard	1			☞ {MC:4.5}
E	14	350N3116A	蓋	Cover	1			☞ {MC:4.5}
CR	15	125N0134E	電源	Power Supply	1	PSU23A		☞ {MC:4.6}
D	16	382N1824	テープ	Tape	1			☞ {MC:4.6}
AT	17	137S1278	ヒューズ	FUSE	3	48V/3.2A For SND23B		☞ {MC:12.3}
AT	18	137S1277	ヒューズ	FUSE	3	48V/2.0A For SND23B		☞ {MC:12.3}

09B 制御部 2 CONTROLLER 2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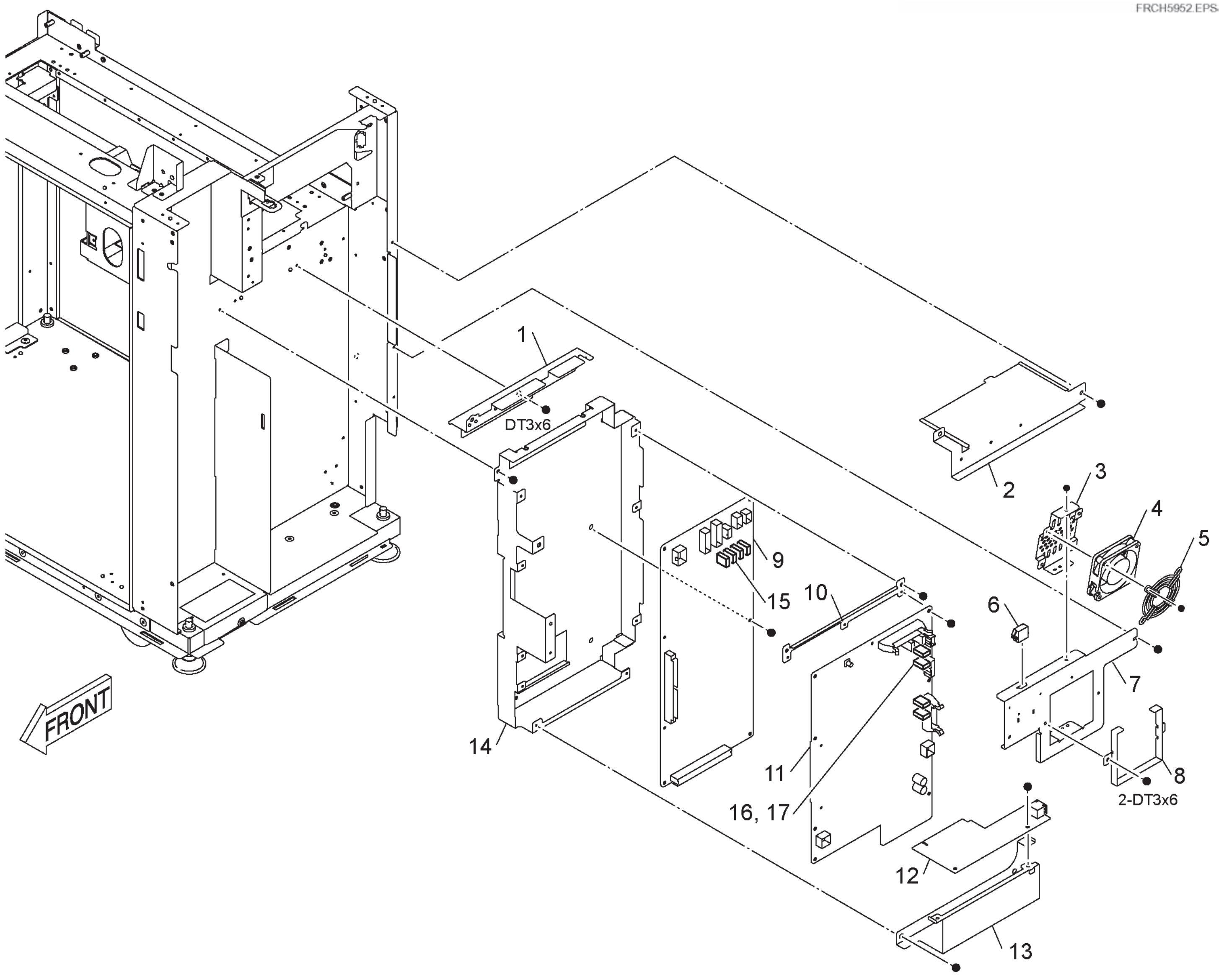
制御部 2 CONTROLLER 2 09B

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
E	1	345N1795A	仕切板	Bracket	1			☞ {MC:11.1}
E	2	364N0122C	ガード	Guard	1			☞ {MC:11.1}
E	3	364N0142B	ガード	Guard	1			☞ {MC:4.4}
D	4	119S0048	電動ファン	Fan	1	FANG3		☞ {MC:4.4}
E	5	364S0068	ガード	Guard	1			☞ {MC:4.4}
D	6	120S4293	コネクタ	Connector	1			☞ {MC:4.4}
E	7	356N10571B	ブラケット	Bracket	1			☞ {MC:4.4}
E	8	346N1540	補助板	Plate Support	1			☞ {MC:4.4}
CR	9	113Y1789B	CPU23B	CPU23B	1			☞ {MC:11.2}
E	10	356N10569B	ブラケット	Bracket	1			☞ {MC:11.2}
CR	11	113Y1733D	SCN23A	SCN23A	1			☞ {MC:11.3}
CR	12	113Y1790B	LAN23A	LAN23A	1			☞ {MC:11.4}
E	13	356N10123B	ブラケット	Bracket	1			☞ {MC:11.4}
E	14	358Y0088D	ボックス	Box	1			☞ {MC:11.2}
AT	15	137S1178	ヒューズ	FUSE	4	48V/1.0A For CPU23B		☞ {MC:12.5}
AT	16	137S1278	ヒューズ	FUSE	1	48V/3.2A For SCN23A		☞ {MC:12.4}
AT	17	137S1276	ヒューズ	FUSE	6	48V/1.6A For SCN23A		☞ {MC:12.4}



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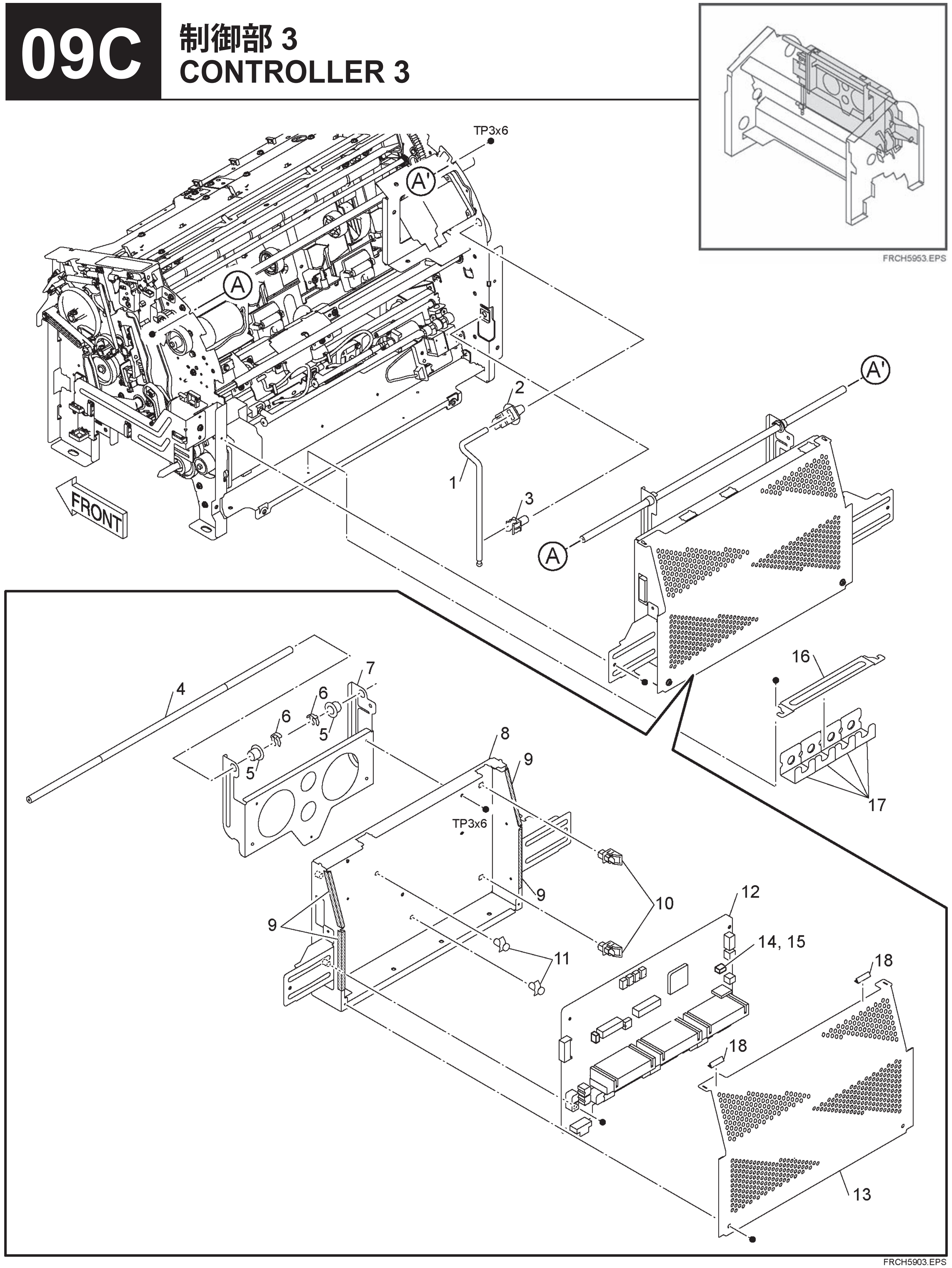
09C 制御部 3 CONTROLLER 3


TP3x6
A'
A
2
1
3
FRONT
A'
A
16
17
4
7
6
6
5
5
8
9
TP3x6
9
9
10
11
12
14, 15
18
18
13
FRCH5953.EPS
FRCH5903.EPS

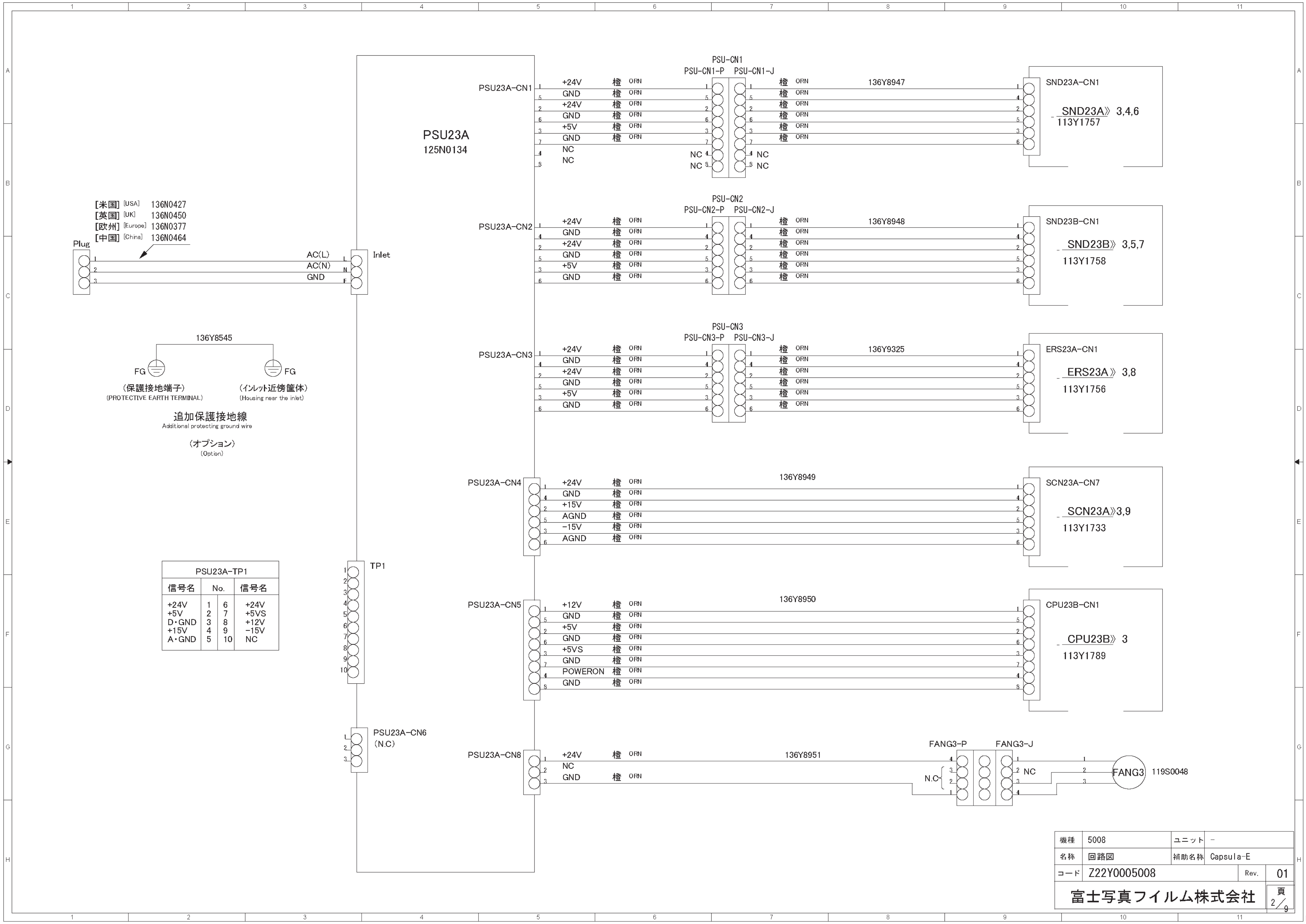
制御部 3
CONTROLLER 3 09C

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
E	1	313N1271C	ステー	Stay	1			☞ {MC:5.3}
E	2	362S0681	受	Rod holder	1			☞ {MC:5.3}
E	3	362S0682	受	Rod holder	1			☞ {MC:5.3}
E	4	319N4114A	軸	Shaft	1			☞ {MC:5.3}
D	5	322SY063	すべり軸受	Plain Bearing	2			☞ {MC:5.3}
D	6	315S0051	止め輪	Snap Ring	2			☞ {MC:5.3}
E	7	356N9813C	ブラケット	Bracket	1			☞ {MC:5.3}
E	8	358Y0083G	ボックス	Box	1			☞ {MC:11.5}
E	9	386N1322A	緩衝機材	Shock Absorber	4			☞ {MC:12.2}
E	10	316S0456	止め具	Clamp	2			☞ {MC:11.5}
E	11	316S0268	止め具	Clamp	2			☞ {MC:11.5}
CR	12	113Y1757D	SND23A	SND23A	1			☞ {MC:11.5}
E	13	350N2642A	カバー	Cover	1			☞ {MC:12.2}
AT	14	137S1278	ヒューズ	FUSE	4	48V/3.2A For SND23A		☞ {MC:12.2}
AT	15	137S1277	ヒューズ	FUSE	1	48V/2.0A For SND23A		☞ {MC:12.2}
E	16	356N10112A	ブラケット	Bracket	1			☞ {MC:10.1}
E	17	356N10787A	ブラケット	Bracket	4			☞ {MC:10.1}
E	18	382N1844	緩衝機材	Shock Absorber	2			☞ {MC:12.2}

10 ケーブル CABLE

RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	CONNECTION DIAGRAM
E	1	136N0377	ケーブル	Cable	1	Europe	2/9
E	2	136N0427	ケーブル	Cable	1	USA	2/9
E	3	136N0450	ケーブル	Cable	1	UK	2/9
E	4	136N0464	ケーブル	Cable	1	China	2/9
E	5	136Y8545A	ケーブル	Cable	1		2/9
E	6	136Y8904D	ケーブル	Cable	1		4/9
E	7	136Y8915D	ケーブル	Cable	1		5/9
E	8	136Y8916A	ケーブル	Cable	1		3/9
E	9	136Y8917C	ケーブル	Cable	1		7/9
E	10	136Y8918B	ケーブル	Cable	1		9/9
E	11	136Y8919D	ケーブル	Cable	1		5/9
E	12	136Y8920C	ケーブル	Cable	1		7/9
E	13	136Y8921B	ケーブル	Cable	4		7/9
E	14	136Y8922A	ケーブル	Cable	1		9/9
E	15	136Y8924A	ケーブル	Cable	1		9/9
E	16	136Y8925D	ケーブル	Cable	1		5/9
E	17	136Y8927	ケーブル	Cable	1		4/9
E	18	136Y8947C	ケーブル	Cable	1		2/9
E	19	136Y8948C	ケーブル	Cable	1		2/9
E	20	136Y8949D	ケーブル	Cable	1		2/9
E	21	136Y8950B	ケーブル	Cable	1		2/9
E	22	136Y8951C	ケーブル	Cable	1		2/9
E	23	136Y9320B	ケーブル	Cable	2		4/9
E	24	136Y9322B	ケーブル	Cable	6		6/9
E	25	136Y9325A	ケーブル	Cable	3		2/9, 3/9, 8/9
E	26	136Y9328B	ケーブル	Cable	2		3/9
E	27	136Y9329B	ケーブル	Cable	3		3/9
E	28	136Y9330C	ケーブル	Cable	6		3/9, 5/9
E	29	136Y9331D	ケーブル	Cable	5		9/9
E	30	136Y9332B	ケーブル	Cable	3		7/9

11 回路図
CIRCUIT DIAGRAM


PSU23A
125N0134
PSU23A-CN1
PSU23A-CN2
PSU23A-CN3
PSU23A-CN4
PSU23A-CN5
PSU23A-CN8
PSU23A-CN6
(N.C)
TP1
Inlet
Plug
AC(L)
AC(N)
GND
[米国] [USA] 136N0427
[英国] [UK] 136N0450
[欧州] [Europe] 136N0377
[中国] [China] 136N0464
136Y8545
FG
FG
(保護接地端子)
(PROTECTIVE EARTH TERMINAL)
(インレット近傍筐体)
(Housing near the inlet)
追加保護接地線
Additional protecting ground wire
(オプション)
(Option)
PSU-CN1
PSU-CN1-P
PSU-CN1-J
PSU-CN2
PSU-CN2-P
PSU-CN2-J
PSU-CN3
PSU-CN3-P
PSU-CN3-J
+24V
GND
+5V
+15V
AGND
−15V
+12V
+5VS
POWERON
NC
橙 ORN
136Y8947
136Y8948
136Y9325
136Y8949
136Y8950
136Y8951
SND23A-CN1
SND23A》 3,4,6
113Y1757
SND23B-CN1
SND23B》 3,5,7
113Y1758
ERS23A-CN1
ERS23A》 3,8
113Y1756
SCN23A-CN7
SCN23A》3,9
113Y1733
CPU23B-CN1
CPU23B》 3
113Y1789
FANG3-P
FANG3-J
N.C
FANG3
119S0048
機種 5008
ユニット −
名称 回路図
補助名称 Capsula-E
コード Z22Y0005008
Rev. 01
富士写真フイルム株式会社
頁 2/9

PSU23A-TP1			
信号名	No.		信号名
+24V	1	6	+24V
+5V	2	7	+5VS
D・GND	3	8	+12V
+15V	4	9	−15V
A・GND	5	10	NC

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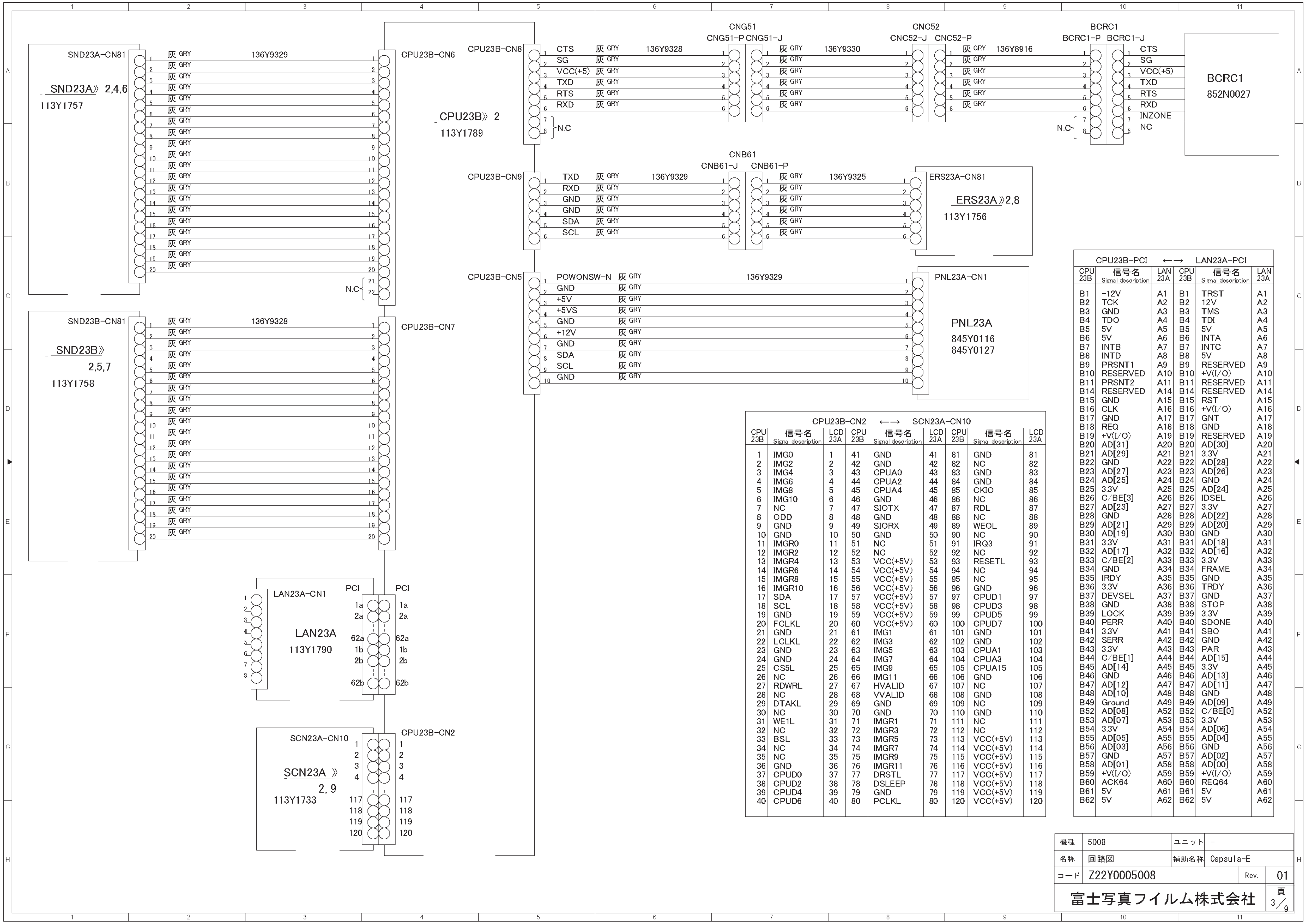
11 回路図 CIRCUIT DIAGRAM


SND23A-CN81
SND23A》2,4,6
113Y1757
136Y9329
CPU23B-CN6
CPU23B》2
113Y1789
N.C
SND23B-CN81
SND23B》
2,5,7
113Y1758
136Y9328
CPU23B-CN7
灰 GRY
CPU23B-CN8
CTS
SG
VCC(+5)
TXD
RTS
RXD
N.C
CNG51
CNG51-P CNG51-J
136Y9330
CNC52
CNC52-J CNC52-P
136Y8916
BCRC1
BCRC1-P BCRC1-J
INZONE
NC
BCRC1
852N0027
CNB61
CNB61-J CNB61-P
CPU23B-CN9
TXD
RXD
GND
SDA
SCL
136Y9325
ERS23A-CN81
ERS23A》2,8
113Y1756
CPU23B-CN5
POWONSW-N
GND
+5V
+5VS
+12V
PNL23A-CN1
PNL23A
845Y0116
845Y0127
LAN23A-CN1
PCI
LAN23A
113Y1790
1a
2a
62a
1b
2b
62b
SCN23A-CN10
CPU23B-CN2
SCN23A》
2, 9
113Y1733
117
118
119
120

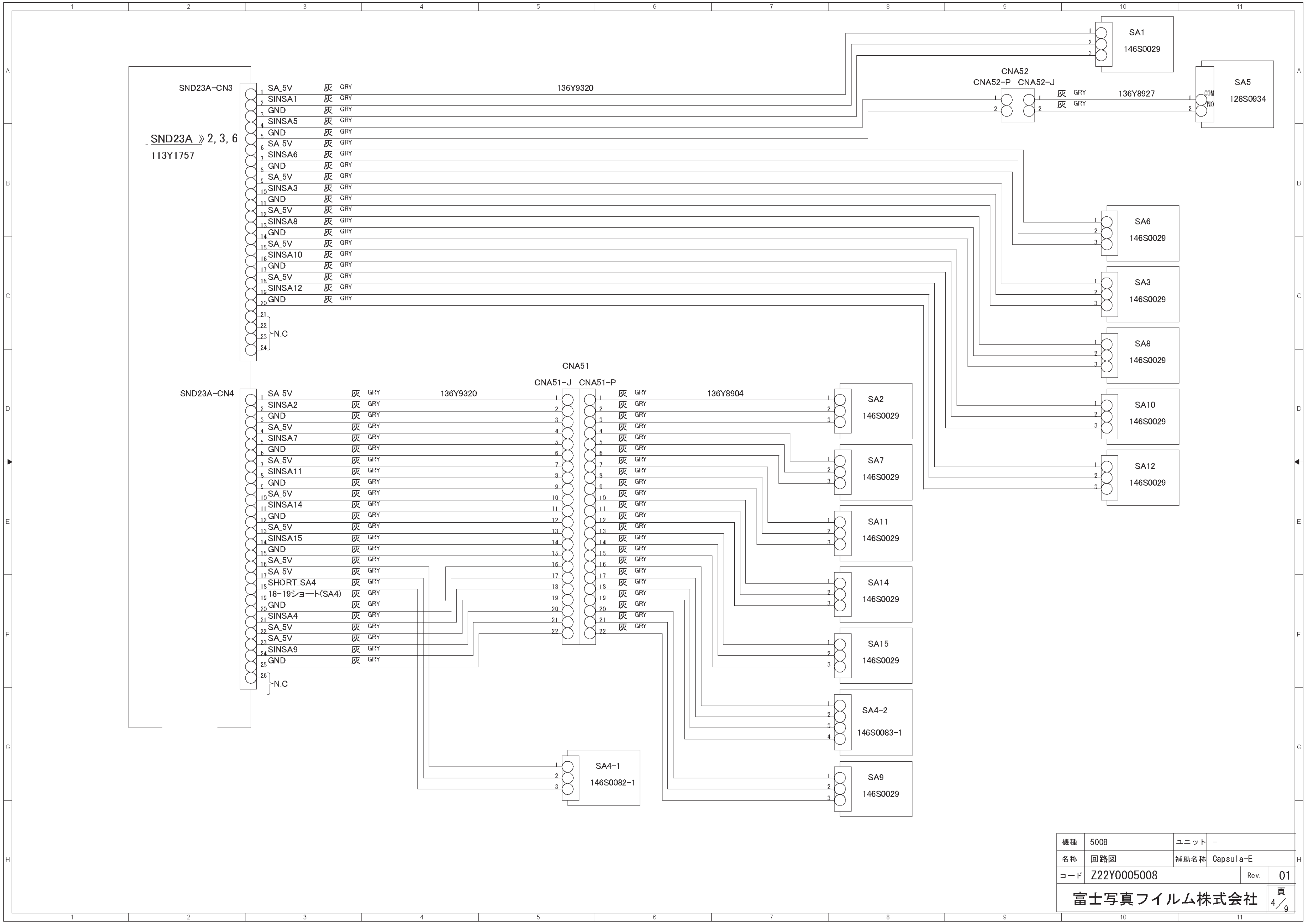
CPU23B-CN2 ←→ SCN23A-CN10								
CPU 23B	信号名 Signal description	LCD 23A	CPU 23B	信号名 Signal description	LCD 23A	CPU 23B	信号名 Signal description	LCD 23A
1	IMG0	1	41	GND	41	81	GND	81
2	IMG2	2	42	GND	42	82	NC	82
3	IMG4	3	43	CPUA0	43	83	GND	83
4	IMG6	4	44	CPUA2	44	84	GND	84
5	IMG8	5	45	CPUA4	45	85	CKIO	85
6	IMG10	6	46	GND	46	86	NC	86
7	NC	7	47	SIOTX	47	87	RDL	87
8	ODD	8	48	GND	48	88	NC	88
9	GND	9	49	SIORX	49	89	WEOL	89
10	GND	10	50	GND	50	90	NC	90
11	IMGR0	11	51	NC	51	91	IRQ3	91
12	IMGR2	12	52	NC	52	92	NC	92
13	IMGR4	13	53	VCC(+5V)	53	93	RESETL	93
14	IMGR6	14	54	VCC(+5V)	54	94	NC	94
15	IMGR8	15	55	VCC(+5V)	55	95	NC	95
16	IMGR10	16	56	VCC(+5V)	56	96	GND	96
17	SDA	17	57	VCC(+5V)	57	97	CPUD1	97
18	SCL	18	58	VCC(+5V)	58	98	CPUD3	98
19	GND	19	59	VCC(+5V)	59	99	CPUD5	99
20	FCLKL	20	60	VCC(+5V)	60	100	CPUD7	100
21	GND	21	61	IMG1	61	101	GND	101
22	LCLKL	22	62	IMG3	62	102	GND	102
23	GND	23	63	IMG5	63	103	CPUA1	103
24	GND	24	64	IMG7	64	104	CPUA3	104
25	CS5L	25	65	IMG9	65	105	CPUA15	105
26	NC	26	66	IMG11	66	106	GND	106
27	RDWRL	27	67	HVALID	67	107	NC	107
28	NC	28	68	VVALID	68	108	GND	108
29	DTAKL	29	69	GND	69	109	NC	109
30	NC	30	70	GND	70	110	GND	110
31	WE1L	31	71	IMGR1	71	111	NC	111
32	NC	32	72	IMGR3	72	112	NC	112
33	BSL	33	73	IMGR5	73	113	VCC(+5V)	113
34	NC	34	74	IMGR7	74	114	VCC(+5V)	114
35	NC	35	75	IMGR9	75	115	VCC(+5V)	115
36	GND	36	76	IMGR11	76	116	VCC(+5V)	116
37	CPUD0	37	77	DRSTL	77	117	VCC(+5V)	117
38	CPUD2	38	78	DSLEEP	78	118	VCC(+5V)	118
39	CPUD4	39	79	GND	79	119	VCC(+5V)	119
40	CPUD6	40	80	PCLKL	80	120	VCC(+5V)	120

CPU23B-PCI ←→ LAN23A-PCI					
CPU 23B	信号名 Signal description	LAN 23A	CPU 23B	信号名 Signal description	LAN 23A
B1	-12V	A1	B1	TRST	A1
B2	TCK	A2	B2	12V	A2
B3	GND	A3	B3	TMS	A3
B4	TDO	A4	B4	TDI	A4
B5	5V	A5	B5	5V	A5
B6	5V	A6	B6	INTA	A6
B7	INTB	A7	B7	INTC	A7
B8	INTD	A8	B8	5V	A8
B9	PRSNT1	A9	B9	RESERVED	A9
B10	RESERVED	A10	B10	+V(I/O)	A10
B11	PRSNT2	A11	B11	RESERVED	A11
B14	RESERVED	A14	B14	RESERVED	A14
B15	GND	A15	B15	RST	A15
B16	CLK	A16	B16	+V(I/O)	A16
B17	GND	A17	B17	GNT	A17
B18	REQ	A18	B18	GND	A18
B19	+V(I/O)	A19	B19	RESERVED	A19
B20	AD[31]	A20	B20	AD[30]	A20
B21	AD[29]	A21	B21	3.3V	A21
B22	GND	A22	B22	AD[28]	A22
B23	AD[27]	A23	B23	AD[26]	A23
B24	AD[25]	A24	B24	GND	A24
B25	3.3V	A25	B25	AD[24]	A25
B26	C/BE[3]	A26	B26	IDSEL	A26
B27	AD[23]	A27	B27	3.3V	A27
B28	GND	A28	B28	AD[22]	A28
B29	AD[21]	A29	B29	AD[20]	A29
B30	AD[19]	A30	B30	GND	A30
B31	3.3V	A31	B31	AD[18]	A31
B32	AD[17]	A32	B32	AD[16]	A32
B33	C/BE[2]	A33	B33	3.3V	A33
B34	GND	A34	B34	FRAME	A34
B35	IRDY	A35	B35	GND	A35
B36	3.3V	A36	B36	TRDY	A36
B37	DEVSEL	A37	B37	GND	A37
B38	GND	A38	B38	STOP	A38
B39	LOCK	A39	B39	3.3V	A39
B40	PERR	A40	B40	SDONE	A40
B41	3.3V	A41	B41	SBO	A41
B42	SERR	A42	B42	GND	A42
B43	3.3V	A43	B43	PAR	A43
B44	C/BE[1]	A44	B44	AD[15]	A44
B45	AD[14]	A45	B45	3.3V	A45
B46	GND	A46	B46	AD[13]	A46
B47	AD[12]	A47	B47	AD[11]	A47
B48	AD[10]	A48	B48	GND	A48
B49	Ground	A49	B49	AD[09]	A49
B52	AD[08]	A52	B52	C/BE[0]	A52
B53	AD[07]	A53	B53	3.3V	A53
B54	3.3V	A54	B54	AD[06]	A54
B55	AD[05]	A55	B55	AD[04]	A55
B56	AD[03]	A56	B56	GND	A56
B57	GND	A57	B57	AD[02]	A57
B58	AD[01]	A58	B58	AD[00]	A58
B59	+V(I/O)	A59	B59	+V(I/O)	A59
B60	ACK64	A60	B60	REQ64	A60
B61	5V	A61	B61	5V	A61
B62	5V	A62	B62	5V	A62

機種	5008	ユニット	–	
名称	回路図	補助名称	Capsula-E	
コード	Z22Y0005008		Rev.	01
富士写真フイルム株式会社				頁 3/9

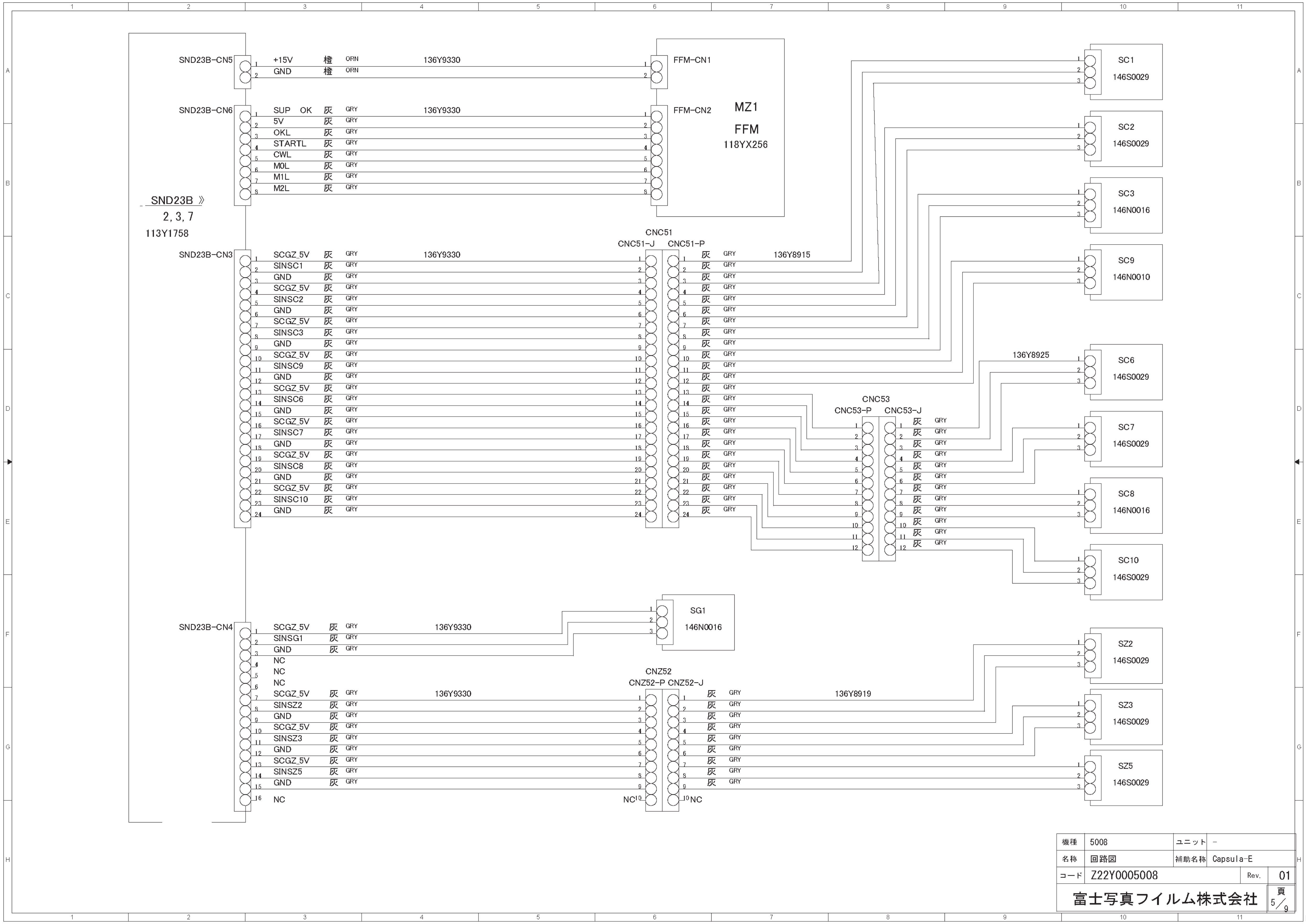
FRCH5B19.EPS

11 回路図
CIRCUIT DIAGRAM


SND23A 》2, 3, 6
113Y1757
SND23A-CN3
1 SA_5V
2 SINSA1
3 GND
4 SINSA5
5 GND
6 SA_5V
7 SINSA6
8 GND
9 SA_5V
10 SINSA3
11 GND
12 SA_5V
13 SINSA8
14 GND
15 SA_5V
16 SINSA10
17 GND
18 SA_5V
19 SINSA12
20 GND
21
22
23
24
N.C
灰 GRY
136Y9320
CNA52
CNA52-P
CNA52-J
136Y8927
SA1
146S0029
SA5
128S0934
COM
NO
SA6
146S0029
SA3
146S0029
SA8
146S0029
SA10
146S0029
SA12
146S0029
SND23A-CN4
1 SA_5V
2 SINSA2
3 GND
4 SA_5V
5 SINSA7
6 GND
7 SA_5V
8 SINSA11
9 GND
10 SA_5V
11 SINSA14
12 GND
13 SA_5V
14 SINSA15
15 GND
16 SA_5V
17 SA_5V
18 SHORT_SA4
19 18-19ショート(SA4)
20 GND
21 SINSA4
22 SA_5V
23 SA_5V
24 SINSA9
25 GND
26
N.C
136Y9320
CNA51
CNA51-J
CNA51-P
136Y8904
SA2
146S0029
SA7
146S0029
SA11
146S0029
SA14
146S0029
SA15
146S0029
SA4-2
146S0083-1
SA9
146S0029
SA4-1
146S0082-1
機種 5008
ユニット －
名称 回路図
補助名称 Capsula-E
コード Z22Y0005008
Rev. 01
富士写真フイルム株式会社
頁 4/9

FRCH5B20.EPS

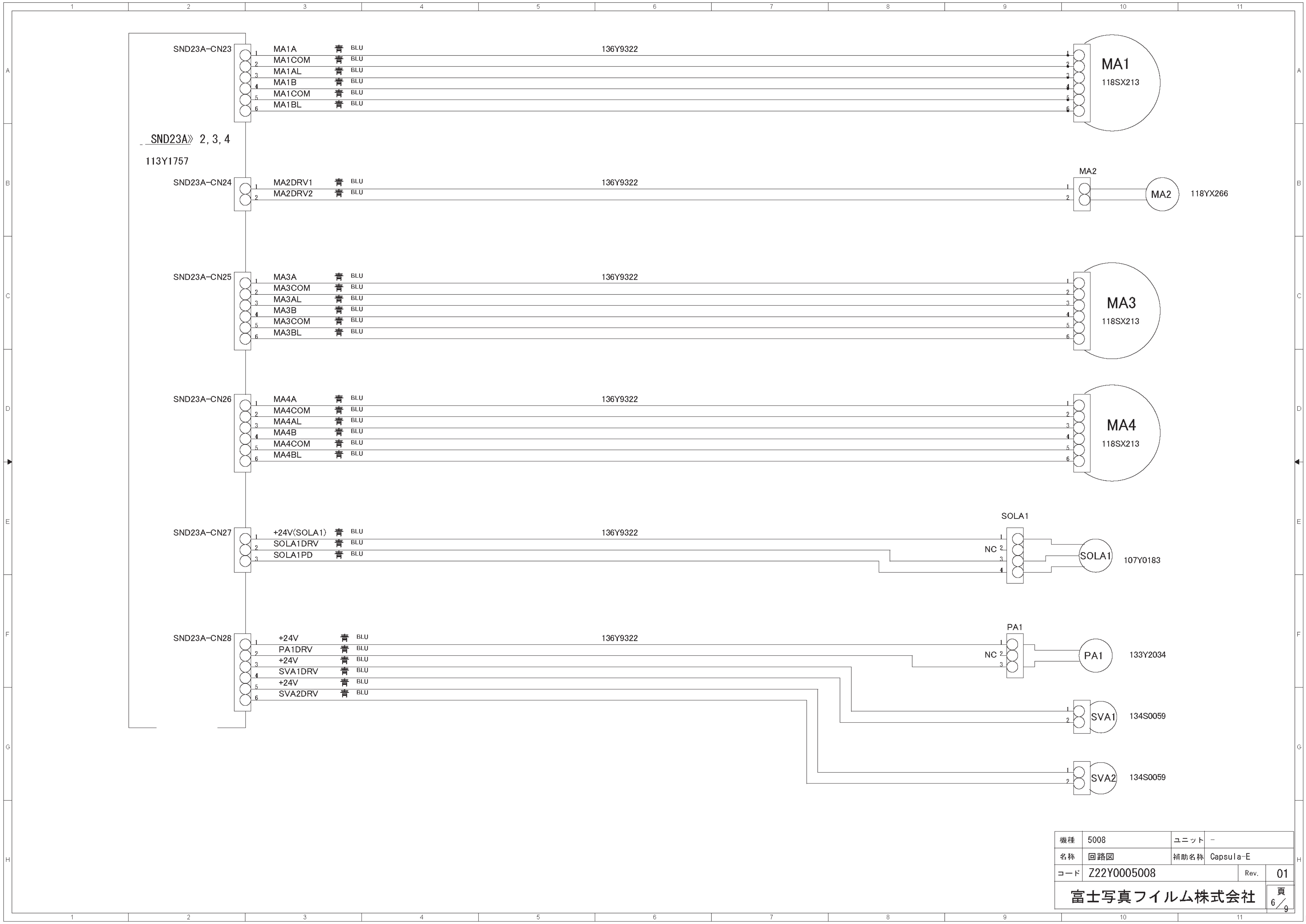
11 回路図
CIRCUIT DIAGRAM


SND23B-CN5
+15V 橙 ORN
GND 橙 ORN
136Y9330
FFM-CN1
SND23B-CN6
SUP OK 灰 GRY
5V
OKL
STARTL
CWL
M0L
M1L
M2L
FFM-CN2
MZ1
FFM
118YX256
SND23B 》
2, 3, 7
113Y1758
SND23B-CN3
SCGZ_5V
SINSC1
GND
SINSC2
SINSC3
SINSC9
SINSC6
SINSC7
SINSC8
SINSC10
CNC51
CNC51-J
CNC51-P
136Y8915
136Y8925
CNC53
CNC53-P
CNC53-J
SC1 146S0029
SC2 146S0029
SC3 146N0016
SC9 146N0010
SC6 146S0029
SC7 146S0029
SC8 146N0016
SC10 146S0029
SND23B-CN4
SINSG1
NC
SINSZ2
SINSZ3
SINSZ5
SG1 146N0016
CNZ52
CNZ52-P CNZ52-J
136Y8919
SZ2 146S0029
SZ3 146S0029
SZ5 146S0029
機種 5008
ユニット –
名称 回路図
補助名称 Capsula-E
コード Z22Y0005008
Rev. 01
富士写真フイルム株式会社
頁 5／9

FRCH5B21.EPS

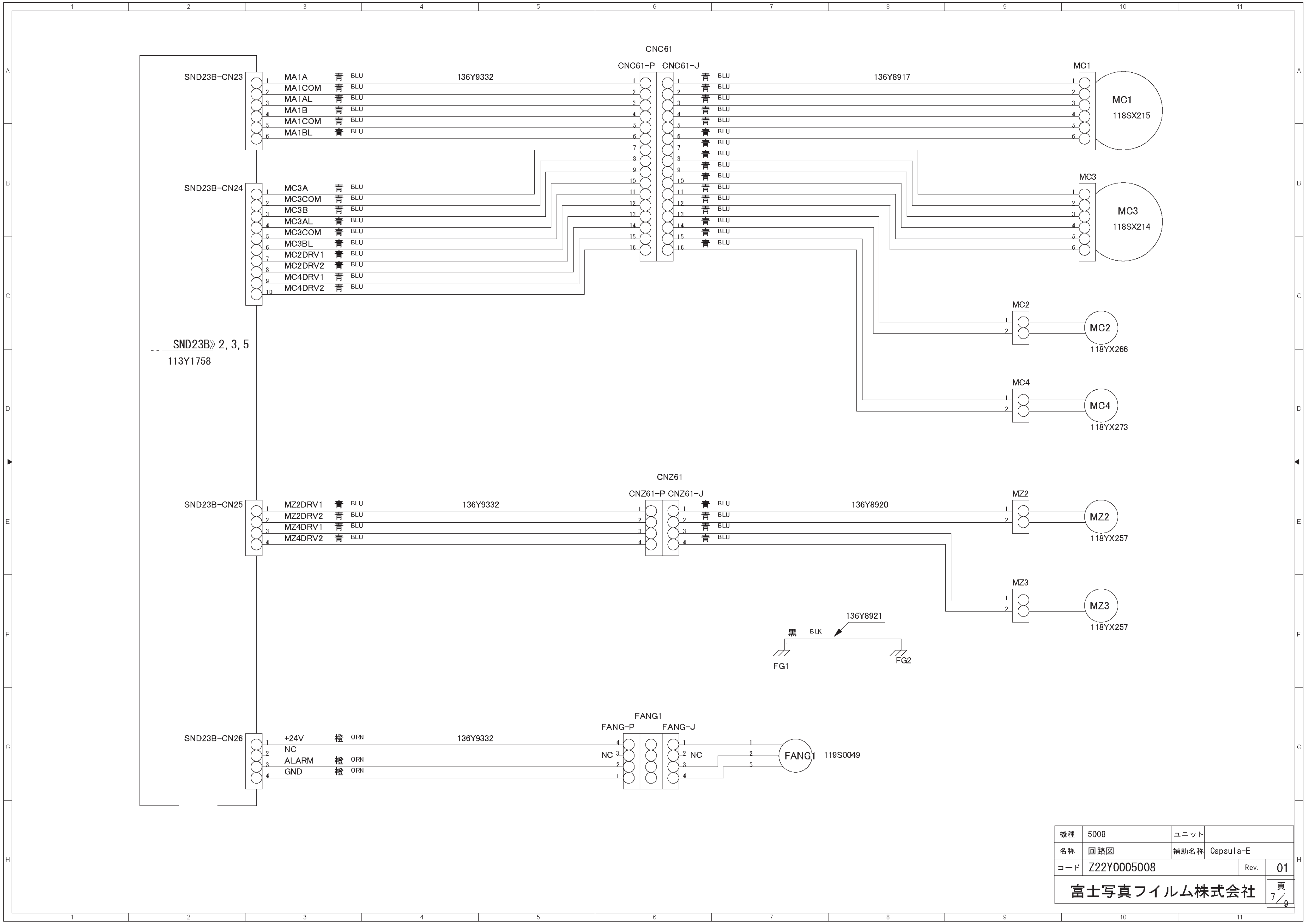
11

回路図
CIRCUIT DIAGRAM


SND23A》2,3,4
113Y1757
SND23A-CN23
MA1A 青 BLU
MA1COM 青 BLU
MA1AL 青 BLU
MA1B 青 BLU
MA1COM 青 BLU
MA1BL 青 BLU
136Y9322
MA1
118SX213
SND23A-CN24
MA2DRV1 青 BLU
MA2DRV2 青 BLU
136Y9322
MA2
118YX266
SND23A-CN25
MA3A 青 BLU
MA3COM 青 BLU
MA3AL 青 BLU
MA3B 青 BLU
MA3COM 青 BLU
MA3BL 青 BLU
136Y9322
MA3
118SX213
SND23A-CN26
MA4A 青 BLU
MA4COM 青 BLU
MA4AL 青 BLU
MA4B 青 BLU
MA4COM 青 BLU
MA4BL 青 BLU
136Y9322
MA4
118SX213
SND23A-CN27
+24V(SOLA1) 青 BLU
SOLA1DRV 青 BLU
SOLA1PD 青 BLU
136Y9322
SOLA1
NC
107Y0183
SND23A-CN28
+24V 青 BLU
PA1DRV 青 BLU
+24V 青 BLU
SVA1DRV 青 BLU
+24V 青 BLU
SVA2DRV 青 BLU
136Y9322
PA1
NC
133Y2034
SVA1
134S0059
SVA2
134S0059
機種 5008
ユニット －
名称 回路図
補助名称 Capsula-E
コード Z22Y0005008
Rev. 01
富士写真フイルム株式会社
頁 6/9

FRCH5B22.EPS

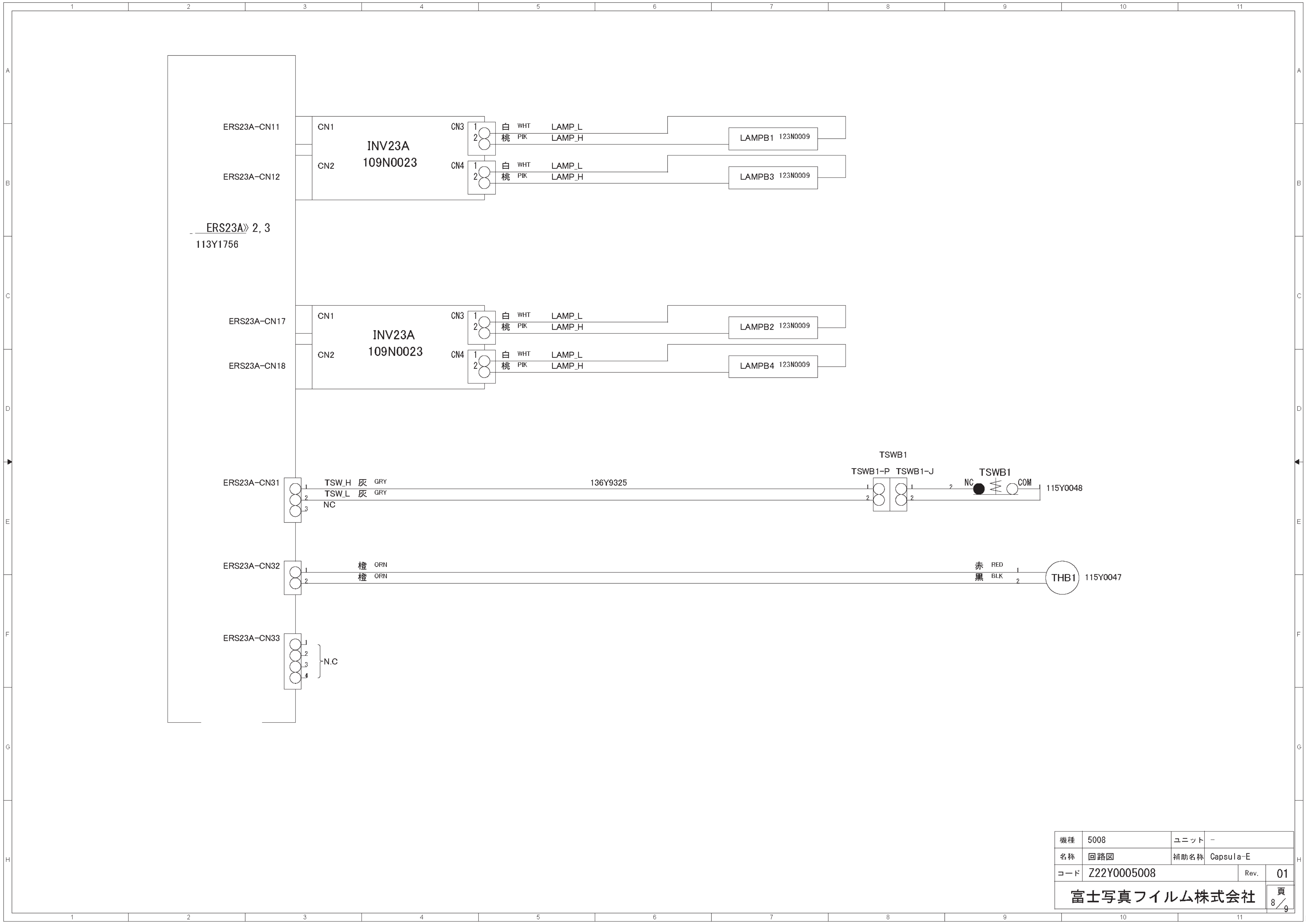
11 回路図 CIRCUIT DIAGRAM


CNC61
CNC61-P
CNC61-J
SND23B-CN23
MA1A
MA1COM
MA1AL
MA1B
MA1COM
MA1BL
青 BLU
136Y9332
136Y8917
MC1
MC1
118SX215
SND23B-CN24
MC3A
MC3COM
MC3B
MC3AL
MC3COM
MC3BL
MC2DRV1
MC2DRV2
MC4DRV1
MC4DRV2
MC3
MC3
118SX214
MC2
MC2
118YX266
MC4
MC4
118YX273
SND23B》2, 3, 5
113Y1758
CNZ61
CNZ61-P
CNZ61-J
SND23B-CN25
MZ2DRV1
MZ2DRV2
MZ4DRV1
MZ4DRV2
136Y9332
136Y8920
MZ2
MZ2
118YX257
MZ3
MZ3
118YX257
136Y8921
黒 BLK
FG1
FG2
FANG1
FANG-P
FANG-J
SND23B-CN26
+24V
NC
ALARM
GND
橙 ORN
136Y9332
NC
NC
FANG1
119S0049
機種
5008
ユニット
-
名称
回路図
補助名称
Capsula-E
コード
Z22Y0005008
Rev.
01
富士写真フイルム株式会社
頁
7/9

FRCH5B23.EPS

11

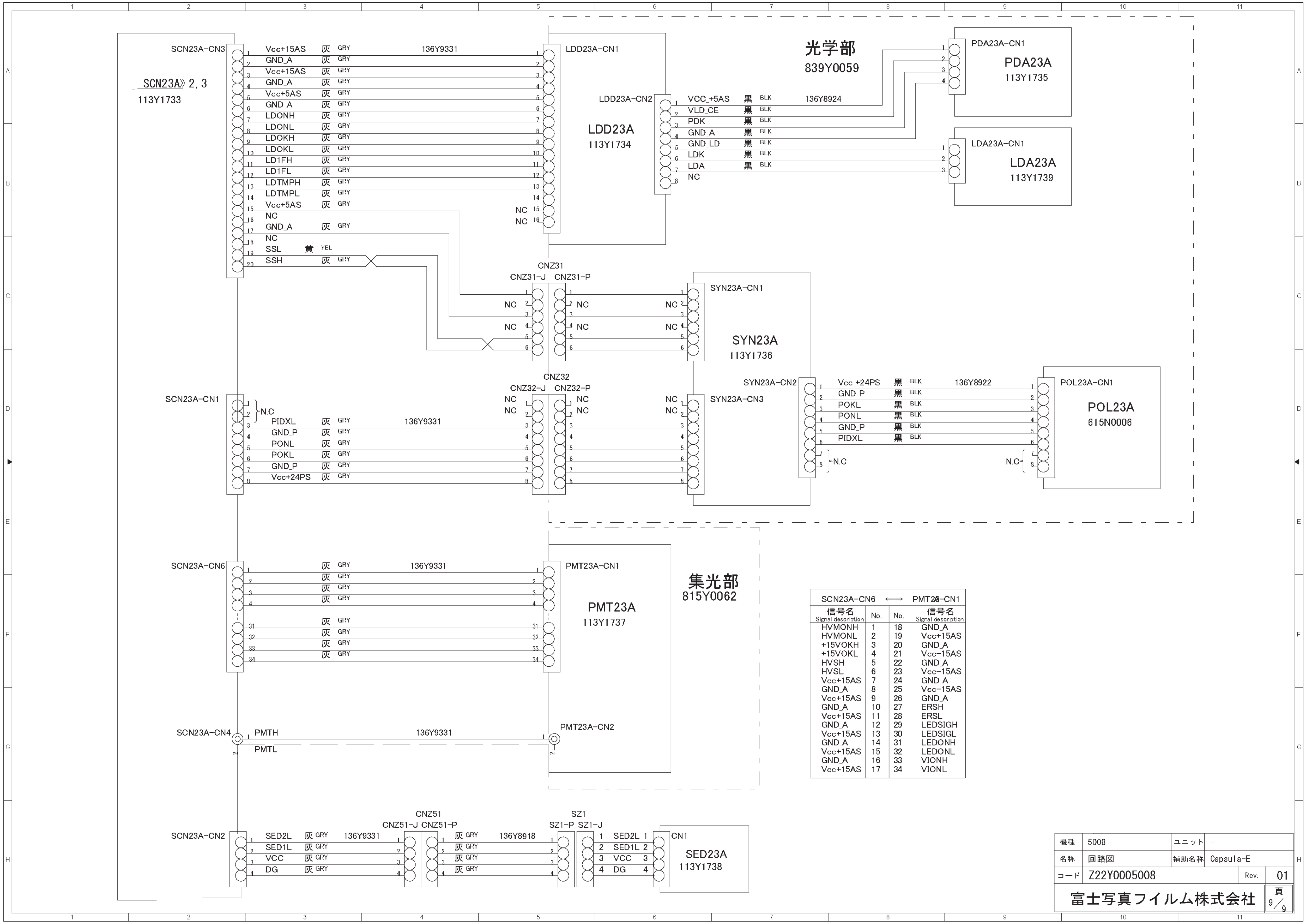
回路図
CIRCUIT DIAGRAM


ERS23A-CN11
ERS23A-CN12
ERS23A》2, 3
113Y1756
ERS23A-CN17
ERS23A-CN18
ERS23A-CN31
ERS23A-CN32
ERS23A-CN33
CN1
CN2
CN3
CN4
INV23A
109N0023
白 WHT
桃 PIK
LAMP_L
LAMP_H
LAMPB1 123N0009
LAMPB3 123N0009
LAMPB2 123N0009
LAMPB4 123N0009
TSW_H 灰 GRY
TSW_L 灰 GRY
NC
136Y9325
TSWB1
TSWB1-P
TSWB1-J
NC
COM
115Y0048
橙 ORN
赤 RED
黒 BLK
THB1
115Y0047
N.C

機種	5008	ユニット	−
名称	回路図	補助名称	Capsula-E
コード	Z22Y0005008	Rev.	01
富士写真フイルム株式会社		頁	8/9

FRCH5B24.EPS

11 回路図 CIRCUIT DIAGRAM


SCN23A》2, 3
113Y1733
SCN23A-CN3
Vcc+15AS
GND_A
Vcc+15AS
GND_A
Vcc+5AS
GND_A
LDONH
LDONL
LDOKH
LDOKL
LD1FH
LD1FL
LDTMPH
LDTMPL
Vcc+5AS
NC
GND_A
NC
SSL
SSH
灰 GRY
黄 YEL
136Y9331
LDD23A-CN1
NC
NC
LDD23A
113Y1734
LDD23A-CN2
VCC_+5AS
VLD_CE
PDK
GND_A
GND_LD
LDK
LDA
NC
黒 BLK
136Y8924
光学部
839Y0059
PDA23A-CN1
PDA23A
113Y1735
LDA23A-CN1
LDA23A
113Y1739
CNZ31
CNZ31-J
CNZ31-P
NC
SYN23A-CN1
SYN23A
113Y1736
CNZ32
CNZ32-J
CNZ32-P
SCN23A-CN1
N.C
PIDXL
GND_P
PONL
POKL
GND_P
Vcc+24PS
136Y9331
SYN23A-CN3
SYN23A-CN2
Vcc_+24PS
GND_P
POKL
PONL
GND_P
PIDXL
136Y8922
POL23A-CN1
POL23A
615N0006
N.C
SCN23A-CN6
136Y9331
PMT23A-CN1
集光部
815Y0062
PMT23A
113Y1737
SCN23A-CN4
PMTH
PMTL
136Y9331
PMT23A-CN2
SCN23A-CN2
CNZ51
CNZ51-J
CNZ51-P
SED2L
SED1L
VCC
DG
136Y9331
136Y8918
SZ1
SZ1-P
SZ1-J
CN1
SED23A
113Y1738
FRCH5B25.EPS

SCN23A-CN6 ←→ PMT23A-CN1			
信号名 Signal description	No.	No.	信号名 Signal description
HVMONH	1	18	GND_A
HVMONL	2	19	Vcc+15AS
+15VOKH	3	20	GND_A
+15VOKL	4	21	Vcc−15AS
HVSH	5	22	GND_A
HVSL	6	23	Vcc−15AS
Vcc+15AS	7	24	GND_A
GND_A	8	25	Vcc−15AS
Vcc+15AS	9	26	GND_A
GND_A	10	27	ERSH
Vcc+15AS	11	28	ERSL
GND_A	12	29	LEDSIGH
Vcc+15AS	13	30	LEDSIGL
GND_A	14	31	LEDONH
Vcc+15AS	15	32	LEDONL
GND_A	16	33	VIONH
Vcc+15AS	17	34	VIONL

機種	5008	ユニット	−
名称	回路図	補助名称	Capsula-E
コード	Z22Y0005008	Rev.	01
富士写真フイルム株式会社		頁	9/9

12 部品番号検索表 PARTS NOS. SEARCH TABLE

Part No.	INDEX No.-Drawing No
107Y0183	03I-9
109N0023	04C-2
109N0023	04C-15
113Y1733D	09B-11
113Y1737D	07-3
113Y1738C	08E-16
113Y1756C	04C-1
113Y1757D	09C-12
113Y1758D	09A-2
113Y1789B	09B-9
113Y1790B	09B-12
115Y0047B	04C-11
115Y0048D	04C-9
118SX213	03B-11
118SX213	03C-12
118SX213	03E-28
118SX214	05G-35
118SX215	05C-15
118YX256	08B-8
118YX268A	03E-16
118YX271B	05B-25
118YX273B	05F-1
118YX276A	08C-10
118YX280	08C-9
119S0048	09B-4
119S0049	07-10
120S4293	07-8
120S4293	09B-6
125N0134E	09A-15
128Y0331	03G-5
133Y2034C	03G-4
134Y0077A	03G-1
136N0377	10A-1
136N0427	10A-2
136N0450	10A-3
136N0464	10A-4
136Y8545A	10A-5
136Y8904D	10A-6
136Y8915D	10A-7
136Y8916A	10A-8
136Y8917C	10A-9
136Y8918B	10A-10
136Y8919D	10A-11
136Y8920C	10A-12
136Y8921B	10A-13
136Y8922A	10A-14
136Y8924A	10A-15
136Y8925D	10A-16
136Y8927	10A-17
136Y8947C	10A-18
136Y8948C	10A-19
136Y8949D	10A-20
136Y8950B	10A-21
136Y8951C	10A-22
136Y9320B	10A-23
136Y9322B	10A-24
136Y9325A	10A-25
136Y9328B	10A-26
136Y9329B	10A-27
136Y9330C	10A-28
136Y9331D	10A-29
136Y9332B	10A-30
137S1178	09B-15
137S1276	09B-17
137S1277	04C-14
137S1277	09A-18
137S1277	09C-15
137S1278	09A-17
137S1278	09B-16
137S1278	09C-14
137S1280	04C-13
146N0010A	05E-4
146N0016A	02B-20
146N0016A	05B-24
146N0016A	05G-19
146S0029A	03D-9
146S0029A	03D-11
146S0029A	03D-17
146S0029A	03E-2
146S0029A	03E-3
146S0029A	03E-4
146S0029A	03E-24
146S0029A	03I-2
146S0029A	03I-4
146S0029A	03I-8
146S0029A	03I-16
146S0029A	03I-18
146S0029A	05B-6
146S0029A	05B-7
146S0029A	05F-7
146S0029A	05F-9
146S0029A	05G-6
146S0029A	08C-15
146S0082	03D-18
146S0083	03D-10
146Y0141	08C-8
146Y0142	08C-11
304S1000820	13-8
304S5000820	13-11
305S0080	13-12
309S0025	08D-12
309S0025	08F-9
309S0077	08B-14
309S0110008	13-10
309S0220008	13-9
310N0714A	03N-10
310S7002016	03E-15
310S7002016	03F-4
310S7002016	03H-5
310S7002016	03M-3
310S7002016	03M-15
310Y0008A	03L-1
313N1230A	03F-16
313N1263C	08C-18
313N1271C	09C-1
313N1309B	05E-10
313N1310B	05E-9
313N1315	08G-12
315N0011	03F-13
315N0011	03G-19
315N0011	03G-31
315S0050	03B-2
315S0050	03D-1
315S0050	03H-14
315S0050	03I-10
315S0050	03K-17
315S0050	03N-11
315S0050	04A-12
315S0050	05B-18
315S0050	05D-15
315S0050	05G-15
315S0050	08B-5
315S0050	08D-2
315S0050	08E-2
315S0050	08E-20
315S0050	08F-2
315S0051	03E-26
315S0051	03F-5
315S0051	03H-3
315S0051	03M-10
315S0051	05B-17
315S0051	05C-13
315S0051	05C-23
315S0051	05C-27
315S0051	05G-2
315S0051	09C-6
315S0053	05B-11
315S0053	05C-6
316S0146	03G-17
316S0146	03G-27
316S0268	09A-4
316S0268	09C-11
316S0456	09A-3
316S0456	09C-10
317N1074B	05F-13
317N5011B	03G-3
317S1064	13-7
318S3060	08E-5
319N3943D	03L-13
319N3944C	03M-2
319N4084B	05B-23
319N4085B	03M-11
319N4086B	03H-6
319N4087A	03F-17
319N4088B	03F-6
319N4089C	03N-22
319N4090B	03L-15
319N4091B	03A-19
319N4112C	03F-15
319N4113B	03E-30
319N4114A	09C-4
319N4115A	03K-16
319N4116A	03K-5
319N4146C	03A-8
319N4168C	03A-6
319N4177C	04B-5
319N4192D	02B-22
319N4263A	08E-18
319N4289E	05G-9
319N4293D	05G-27
319N4452A	05G-10
319Y1164A	03I-13
322N0037D	03C-10
322N0037D	03E-20
322N1015C	03H-7
322N1016D	03K-3
322N1016D	03L-5
322N1016D	03L-16
322N1017B	03L-2
322N1036B	03A-3
322N2004A	03F-9
322NB002	03N-7
322NB002	04A-6
322NB002	05D-4
322NB002	05D-26
322NB002	05D-27
322NB002	05D-28
322NB002	05D-29
322NB002	05D-30
322NB002	08D-4
322NB002	08F-4
322NB003	05B-13
322NB003	05C-4
322NB003	05C-25
322NB003	05D-9
322NB003	05D-35
322NB003	05D-36
322NB003	05D-37
322NB003	08D-9
322NB003	08F-7
322NB004	05D-6
322NB005	05F-11
322NB006	03A-17
322NB006	05G-26
322SB040	03F-1
322SF145	03N-19
322SF155	05G-23
322SF155	08E-4
322SP201	03C-11
322SP201	03E-21
322SP203	04A-11
322SP211	08B-2
322SP211	08C-13
322SP214	05B-21
322SP214	05C-11
322SY059	05B-8
322SY063	05C-20
322SY063	09C-5
322SY066	03A-5
322SY066	03I-11
322SY066	03K-18
322SY067	03K-14
322SY092	03B-8
322SY092	03D-6
322SY094	03B-4
322SY094	03D-4
322SY094	03H-8
322SY101	03L-7
322SY121	03N-8
322SY232	05B-15
322SY251	03C-5
322SY251	03C-15
322SY251	03E-12
322SY251	03E-25
322SY251	03F-2
322SY251	03H-2
322SY251	03M-5
322SY251	03M-16
322SY251	03N-4
322SY303	05B-9
322SY303	05C-8
322SY322	05G-4
322SY322	05G-36
323N1262A	08B-11
323N1266	08B-13
323S3374	05C-2
324N0080	05C-18
324N0080	05C-22
324N3194D	05C-1
324N3198	05C-19
327N0193A	03B-7
327N0193A	03C-8
327N0194	03B-6
327N0194	03C-9
327N0208	04A-10
327N0209D	03C-3
327N0209D	03E-6
327N0210B	03E-23
327N0213C	08E-1
327N0214B	08E-3

12

部品番号検索表
PARTS NOS. SEARCH TABLE

Part No.	INDEX No.-Drawing No
327N0217A	05B-4
327N0218A	05B-2
327N0219B	05B-1
327N0219B	05B-26
327N0232B	05G-29
327N0233	05G-22
327N0234B	05G-21
327N0236D	05F-3
327N0237B	05H-2
327N1101607B	03A-2
327N1102202C	03E-14
327N1102202C	03F-3
327N1102410C	05B-16
327N1102410C	05C-12
327N1103008A	05F-4
327N1103208C	03E-13
327N1103208C	05B-19
327N1103610D	03C-7
327N1103610D	03E-19
327N1121605C	03N-13
327N1121608A	03N-14
327N1121608A	04A-5
327N1121608A	05D-2
327N1121801B	03N-5
327N1122501B	03E-22
327N1122501B	04B-4
327N1122803B	05B-3
327N6101401D	03A-1
327Y0017	05G-25
328N0046B	03K-11
329N0167B	03H-4
329N0168B	03B-5
329N0169C	03D-5
329N0171D	08C-12
329N0176D	05G-31
329N0177C	05F-5
329N0178B	05C-9
329N0178C	05B-20
330S0013	05G-24
332N0620	04A-9
332N0621D	03M-7
332N0622C	03K-13
332N0622C	03L-11
332N0622C	03M-13
332N0640	03C-16
334N0068A	08B-3
334N2388C	03F-18
334N2390D	03A-18
334N2391C	03F-14
334N2392	03K-8
334N2393	03F-19
334N3614B	08D-11
334N3614B	08F-14
334N3616C	03N-21
334N3617B	03N-18
334N3618B	03N-25
334N3619	05A-6
334N3621	05D-21
334N3622A	05D-20
334N3623	05D-19
334N3624A	05D-18
334N3625B	05D-17
334N3625B	05D-38
334N5027	04A-8
334Y2247	03A-16
334Y2249A	03F-12
334Y2255	05A-7
334Y2256	08A-8
334Y3207A	03N-20
334Y3208A	03N-17
334Y3228B	08E-11
334Y3229	08D-10
334Y3229	08F-13
334Y5010A	04A-3
335N0091D	07-5
335N0095B	03E-10
337N0070A	08B-12
337N0070A	08B-18
337N0071B	08B-10
340D775280A	03N-12
341N0937B	03C-6
341N0937B	03E-18
341N1051B	03L-3
341N1052D	03M-1
341N1052D	03M-14
341N1053A	03J-9
341N1054C	03B-9
341N1124C	08C-7
341N1131C	03D-7
341N1132C	03F-7
341N1133B	03F-10
341N1134C	03B-1
341N1134C	03D-2
341N1135B	03B-3
341N1135B	03D-3
341N1136D	03I-12
341N1137D	03N-3
341N1139A	03D-12
341N1165C	03K-7
341N1166B	03K-9
341N1167	03E-11
341N1184C	05G-8
341N1188E	05G-7
341N1189D	05G-3
341N1203A	05G-33
341Y0334A	05C-21
341Y0343	03G-13
341Y0352	08B-6
341Y0412	08C-4
341Y0412	08C-20
342N0132B	03J-2
342Y0026B	03H-12
342Y0027B	03H-11
342Y0028B	03L-12
342Y0035A	05B-14
343N0048	01A-3
343N0068A	08D-3
343N0068A	08F-3
343N0069A	08D-14
343N0069A	08F-16
345N1663A	07-6
345N1723C	07-1
345N1724C	07-4
345N1742E	01A-9.1
345N1743D	01A-11.1
345N1757B	02B-8
345N1795A	09B-1
345N1799A	02B-21
345N1884A	01A-9.2
345N1885A	01A-11.2
345Y0318B	01A-6
345Y0319C	01B-3
345Y0320B	01B-12
346N1254D	03A-20
346N1405B	05D-22
346N1475B	08A-12
346N1540	09B-8
346Y0083D	03I-15
347N1624A	05B-12
347N1624A	05C-5
347N1624A	05C-26
347N1624A	05D-16
347N1939	05C-3
347N1939	05C-24
347N1944A	08D-8
347N1944A	08F-6
347N1950E	08A-2
347N2034	05B-10
347N2034	05C-7
347N2067B	05G-30
347N2068A	05G-28
347N2082B	05G-16
347N2108	13-5
347N2109	13-6
347N2124	02A-16
350N2642A	09C-13
350N2643B	03J-4
350N2924C	08B-7
350N2972C	04A-4
350N2974E	01A-18.1
350N2998C	09A-1
350N3085C	01A-17.1
350N3116A	09A-14
350N3133B	02B-12
350N3134B	02B-9
350N3235C	01B-7.1
350N3239C	04C-12
350N3309A	01A-18.2
350N3310B	01B-7.2
350N3318A	01A-17.2
350N3329B	08B-17
350Y1761D	04B-2
350Y1809B	01B-9.1
350Y1867	04A-1
350Y1874D	01A-1.1
350Y1925C	01A-7.1
350Y1951B	03A-15
350Y1953A	03A-13.1
350Y1954A	03A-13.2
350Y1957A	03A-9.1
350Y1958A	03A-9.2
350Y1959B	01B-1.1
350Y2059A	01B-9.2
350Y2061D	01A-1.2
350Y2065B	01A-7.2
350Y2067C	01B-1.2
350Y2080C	01A-1.3
350Y2082	01B-10.1
350Y2083	01B-10.2
353N0144	03K-4
353Y0072E	03L-9
353Y0073F	03A-21
355N0752F	05G-18
355Y0241	04C-4
356N10086	08D-13
356N10086	08F-8
356N10089A	07-9
356N10090A	08D-5
356N10090A	08E-12
356N10090A	08F-15
356N10091A	08E-9
356N10105A	03I-1
356N10106A	03E-17
356N10107A	03E-29
356N10108A	03D-15
356N10110	03M-9
356N10111	03A-23
356N10112A	09C-16
356N10123B	09B-13
356N10152A	05G-5
356N10180D	09A-7
356N10182A	02A-15
356N10196B	05F-2
356N10199B	05C-14
356N10200A	08F-11
356N10201C	05C-16
356N10208A	02B-13
356N10253B	02A-4
356N10254B	02A-6
356N10256C	05G-1
356N10261B	05E-5
356N10305	05E-3
356N10492D	05E-6
356N10493A	05E-7
356N10495C	05F-10
356N10505B	05F-8
356N10562	08E-14
356N10567B	05E-8
356N10569B	09B-10
356N10570C	02A-9
356N10571B	09B-7
356N10761A	01B-18
356N10768A	01A-19
356N10769A	01B-15
356N10786A	08A-9
356N10787A	09C-17
356N10790A	03A-22
356N9191	05E-19
356N9472B	03J-7
356N9651F	05E-1
356N9658D	05B-5
356N9661B	08C-14
356N9665B	08E-15
356N9680B	03E-1
356N9682A	03G-15
356N9683B	03G-14
356N9685A	03D-8
356N9689A	05A-4
356N9731C	04C-3
356N9731C	04C-16
356N9808A	03D-19
356N9809E	03L-6
356N9810D	03I-5
356N9811B	03D-16
356N9812C	03I-6
356N9813C	09C-7
356N9814B	03C-13
356N9815A	03E-8
356N9816C	03C-1
356N9819D	02B-19
356N9820E	02B-17
356N9824E	08A-7
356N9829B	04B-6
356N9851B	04C-6
356N9873A	03M-4
356N9874A	03G-21
356N9875A	03G-20
356N9876A	03G-10
356N9877B	03I-17
356Y0353A	03D-14

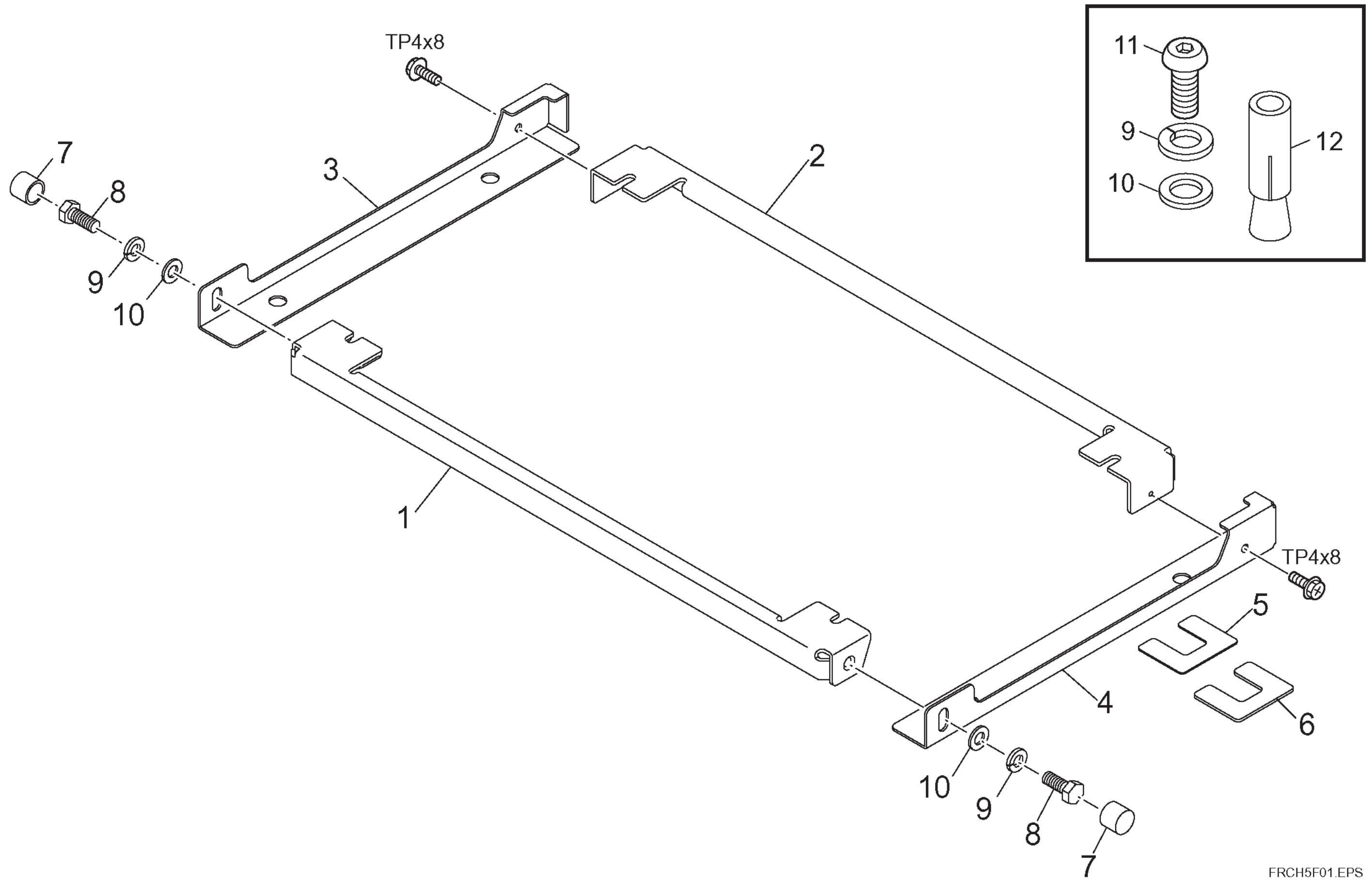
12

部品番号検索表
PARTS NOS. SEARCH TABLE

Part No.	INDEX No.-Drawing No
356Y0354C	03K-2
356Y0355A	03K-10
356Y0356B	03N-24
356Y0368B	04C-7
356Y0405B	04C-10
356Y0406B	03A-7
356Y0407A	03A-4
356Y0409E	05G-34
356Y0415B	08B-9
356Y0416B	05F-6
356Y0454	05G-20
356Y0457A	03A-14
356Y0458A	03A-10
356Y0459	02A-1
356Y0460	02A-5
356Y0475	13-1
356Y0498	13-4
356Y0499	13-3
356Y0502	13-2
356Y0604	05E-11
356Y0605C	05E-12
356Y0607	05E-15
356Y0608A	08G-3
356Y0609	08G-10
356Y0610A	01B-20
356Y0612	08G-8
356Y0613A	08G-1
356Y0615	08C-16
356Y0616A	01A-21
356Y0617A	01B-17
356Y0622A	08G-6
356Y0623	05E-16
357N1531D	03L-14
357Y0206E	03H-10
358Y0083G	09C-8
358Y0086B	09A-5
358Y0088D	09B-14
360N0475A	03N-6
360N0494B	08D-6
360N0494B	08F-5
360N0508A	08C-1
360N0508A	08C-19
360N0521E	05D-7
360N0521E	05D-33
360N0537B	05G-12
360N0542C	05D-3
360N0542C	05D-25
360N0543A	05D-8
360N0543A	05D-34
360N0547C	05F-16
360N0548C	05F-14
360N0553A	05G-14
360Y0174C	04C-5
362N0723D	03M-6
362N0724C	03M-12
362N0762D	03L-10
362N0763D	03J-10
362N0764B	03J-3
362N0768B	03K-12
362N0769A	03H-13
362N0780C	04A-7
362N0833B	02B-7
362N0834E	02B-5
362N0835B	02B-6
362N0836F	02B-15
362S0681	09C-2
362S0682	09C-3
363N2060C	08E-7
363N2505B	03L-4
363N2506B	03J-6
363N2507A	03N-16
363N2613C	02B-3
363N2614C	02B-4
363N2617C	05A-1
363N2620D/E	08F-17
363N2664B	08D-15
363N2699D	08A-5
363N2724E	05F-15
363N2725E	05F-12
363N2728E	05A-3
363N2792C	05D-23
363N2793F	05D-24
363N2825B	05H-4
363N2826A	05H-1
363N2849	08A-10
363Y0557B	08A-11
363Y0565B	08A-6
364N0114C	09A-13
364N0122C	09B-2
364N0142B	09B-3
364S0068	09B-5
364Y0018A	09A-11
365N0114A	08A-3
367N2069	02A-13
367S1109A	02A-14
368Y0027B	05G-17
369N0275B	03G-2
369N0279E	09A-9
369N0281D	04A-2
369N0288A	03G-6
369Y0029C	09A-8
370NC200	03G-16
370NC200	03G-26
372S0049	03G-12
372S0049	03G-24
372S0049	03G-29
372S0050	03G-8
372S0053	03G-11
372S0053	03G-23
372S0053	03G-28
372S0280	03G-7
375N0099	02C-1
375N0103B	02B-10
375N0104B	02B-11
375S0040	03G-9
375S0040	03G-25
375S0040	03G-30
376N0240B	01A-8
376N0241B	01A-10
376N0241B	01B-11
382N1665	01B-13
382N1666A	01B-14
382N1667	01A-4
382N1667	01B-5
382N1668	01B-4
382N1670	01A-5
382N1711B	01A-12
382N1712B	01A-15
382N1713A	01A-13
382N1715B	01A-16
382N1716	01A-14
382N1717	02A-10
382N1718A	02A-11
382N1719	02A-12
382N1745B	02A-2
382N1746A	02A-7
382N1747	02A-3
382N1747	03A-12
382N1758	09A-10
382N1759	09A-12
382N1819	02B-18
382N1820	02A-8
382N1824	09A-16
382N1839	01B-6
382N1844	09C-18
382N1864	02B-16
383Y0075A	03N-2
383Y0075A	03N-27
384N0104	08B-15
384N0104	08F-19
384N0105A	02B-23
386N1266	03A-11
386N1292B	02B-14
386N1292B	08F-12
386N1303A	03E-5
386N1304A	03C-4
386N1307A	03B-10
386N1307A	03C-14
386N1307A	03E-27
386N1322A	03I-7
386N1322A	09C-9
386N1323	03N-23
386N1328	03G-18
386N1362	05E-13
386N1363	08G-4
386N1365	05E-17
386N1365	08C-17
386N1366	08G-2
386N1367	01B-19
386N1369	08G-7
386N1370	05E-14
386N1370	08G-11
386N1372	01A-20
386N1373	01B-16
386N1374	01A-23
386N1374	01B-21
386N1375	01A-22
386N1377	08B-16
386N1380	08G-5
387N0138C	03A-24
387N0168	03J-8
387N0170B	08E-19
387N0186C	05A-2
387N0186C	05A-9
387N0187	02B-2
387N0188	02B-1
387N0189	08E-6
387N0190B	03M-8
387N0197	07-12
387N0198A	08F-18
387N0200A	05A-8
388N1216	03D-13
388N1234	08B-4
388N1243	05G-13
388N2435	08E-8
388N2458A	05D-1
388N2524A	05D-11
388N2560A	03H-9
388N2560A	03J-1
388N2562A	03C-2
388N2563A	03E-9
388N2563A	03I-14
388N2565A	03L-8
388N2566	03K-1
388N2567	03K-15
388N2568	03K-6
388N2569A	08D-1
388N2569A	08D-16
388N2569A	08F-1
388N2569A	08F-20
388N2570	08B-1
388N2575B	05D-12
388N2575B	05D-32
388N2576B	05D-31
388N2576C	05D-5
388N2594B	03N-1
388N2594B	03N-26
388N2610	05G-11
388N2613	05C-17
388N2614A	05D-14
388N2615A	03E-7
388N2615A	05D-10
388N2616	05D-13
388N2621C	05H-3
388N3101D	03J-5
388N3102A	03F-8
388N3103A	03F-11
388N3104B	03N-9
388N3105B	03N-15
388N3106B	03I-3
388N5414A	05A-5
388N5421	05B-22
388N5421	05C-10
388Y5010A	05G-32
392N0009A	03G-22
392N0009A	03G-32
405N0186	03H-1
405N0186	05E-2
405N1880	08A-4
405N2505A	01B-8
405N3178C	01A-2
405N3178C	01B-2
405N3178C	01B-22
405N3392	04B-3
405N3485	07-11
405N3486	07-2
407Y0031E	04B-7
602Y0132	08E-17
603Y0070C	04C-8
606Y0086C	07-7
815Y0072	07-7
839Y0068	06-1
840Y0112C	04B-1
845Y0116B	09A-6.1
845Y0127B	09A-6.2
852Y0074	05E-18
898Y0981	14-1
898Y1311	08A-1

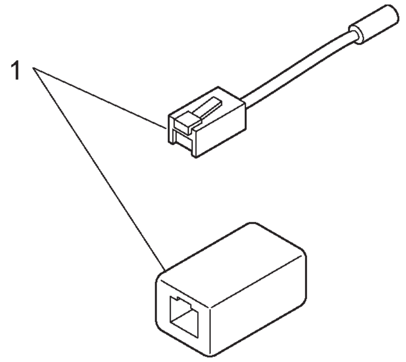
13 オプション OPTION

オプション OPTION 13



RANK	REF.	PART NO.	PART NAME		QTY.	REMARKS	SERIAL NO.	REFER TO
E	1	356Y0475	ブラケット（前面用）	Bracket	1			—
E	2	356Y0502	ブラケット（背面用）	Bracket	1			—
E	3	356Y0499	ブラケット（左側面用）	Bracket	1			—
E	4	356Y0498	ブラケット（右側面用）	Bracket	1			—
E	5	347N2108	スペーサ（1mm）	Spacer	6			—
E	6	347N2109	スペーサ（2mm）	Spacer	4			—
E	7	317S1064	キャップ	Cap	2			—
E	8	304S1000820	六角ボルト（8x20）	Hexagon head socket Bolt	2			—
E	9	309S0220008	バネ座金（SW8）	Spring washer	6			—
E	10	309S0110008	平座金（W8）	Plain washer	6			—
E	11	304S5000820	六角穴付ボタンボルト（8x20）	Bolt	4			—
E	12	305S0080	アンカーナット（Na8）	Anchor nut	4			—

14 治具 JIG



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治具 JIG 14

RANK	REF.	PART NO.	PART NAME	QTY.	REMARKS	SERIAL NO.	REFER TO
E	1	898Y0981	ループケーブル Loop cable	1			☞ {MC:21.}

15 締結用および配線用のサービス部品一覧表
List of Service Parts for Securing and Wiring

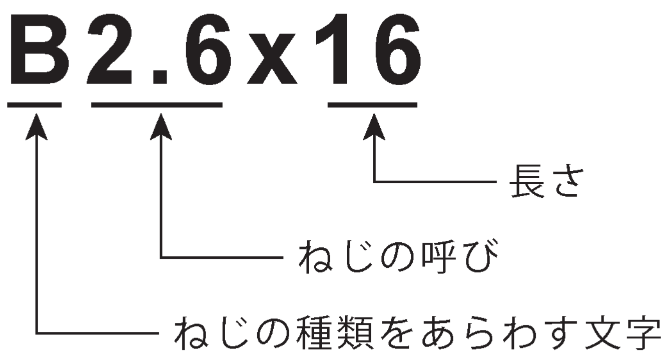
1. 締結用および配線用のサービス部品について

- 発注の際は部品コードと発注数量を明記すること。発注数量は 100 個単位とする。
- サービス部品の納入時、部品コードをサービスマニュアルで使用されている記号に読替えるための表が「5.［部品コード］→［記号］読替表」に用意されている。

☞ **{SP:15_5.［部品コード］→［記号］読替表 }**

2. ねじ類

- サービス部品一覧表の中のねじの記載方法の例を以下に示す。この記載方法はサービスマニュアル内の記載方法と同じである。



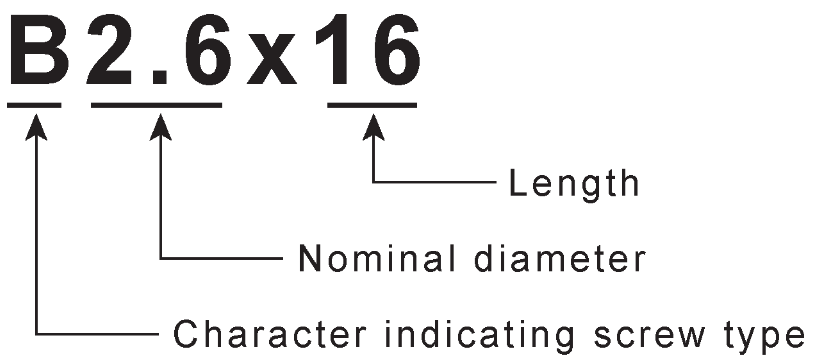
1. Service Parts for Securing and Wiring

- Clearly indicate the part code and quantity required when ordering service parts. Service parts can be ordered in sets of 100.
- The table in “5. [Parts Code] to [Symbol] Conversion Table” is provided for converting the parts code of delivered service parts to the symbols used in the service manual.

☞ **{SP:15_5. [Parts Code] to [Symbol] Conversion Table}**

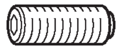
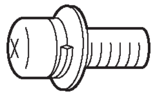
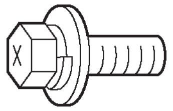
2. Screws

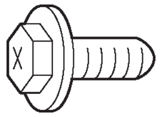
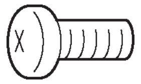
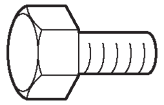
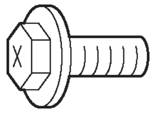
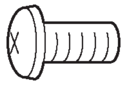
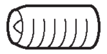
- The following is an example of how screws in the service parts table are described. This description method is the same as that in this Service Manual.



15

締結用および配線用のサービス部品一覧表
List of Service Parts for Securing and Wiring

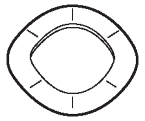
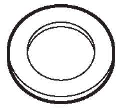
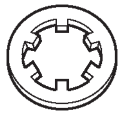
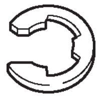
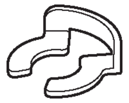
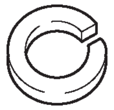
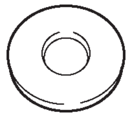
記号 Symbol	部品コード Parts code	参考情報 Reference information		
		形状 Shape	部品名称 Parts name	材質、処理など Material/treatment, etc.
Special 4x10	308S0073		SCS-M4X10-F	
B2x6	308S2780206		ばね座金組込み十字穴付なべ小ねじ （ダブルセムスねじ） Cross recessed pan head screw with spring and plain washers	鋼 亜鉛メッキ + 白色 3 価クロメート 色：うすい白色 Steel Zinc plating/White trivalent chromating Color: Light white
B2x6	308S3420206			鋼 クロメート Steel Chromating
B3x6	308S3380306			
B3x8	308S3380308			
B3x12	308S3380312			
B3x16	308S3380316			
BR3x6	308S0401		座金組込み十字穴付六角ボルト Cross recessed hexagon head screw with spring and plain washers	鋼 ばね座金 + みがき丸座金 亜鉛メッキ + 白色 3 価クロメート 色：うすい白色 Steel Zinc plating/White trivalent chromating Color: Light white
BR3x10	308S0403			
BR3x12	308S0404			
BR3x22	308S0431			
BR4x8	308S0406			
BR4x25	308S0411			
BR5x12	308S9420512			鋼 ばね座金 + みがき丸座金 クロメート Steel Chromating

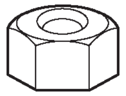
記号 Symbol	部品コード Parts code	参考情報 Reference information		
		形状 Shape	部品名称 Parts name	材質、処理など Material/treatment, etc.
DT3x6	306S0101		六角頭デルタイトネジ Hexagon head deltight screw	鋼 亜鉛メッキ + 白色 3 価クロメート 色：うすい白色 Steel Zinc plating/White trivalent chromating Color: Light white
*N2x6	301S2000206		十字穴付なべ小ねじ Cross recessed pan head screw	ステンレス 不動態化処理 Stainless steel Passive state treatment
*N4x8	301S2000408			
*R8x20	304S1000820		六角ボルト Hexagon head screw	ステンレス 不動態化処理 Stainless steel Passive state treatment
TP3x6	308S0414		六角頭 TP ネジ Cross recessed hexagon head TP screw	鋼 亜鉛メッキ + 白色 3 価クロメート 色：うすい白色 Steel Zinc plating/White trivalent chromating Color: Light white
TP4x8	308S0424			
TP4x12	308S0426			
V3x4	301S4990304		バインド小ねじ Bind screw	ステンレス 不動態化処理 Stainless steel Passive state treatment
WP3x4	303S0102		六角穴付き止めネジ （W ポイント） Hexagon socket head set screw (double -point)	鋼 亜鉛めっき + リン酸塩処理 Steel Zinc plating/Phosphate treatment

15 締結用および配線用のサービス部品一覧表
List of Service Parts for Securing and Wiring

3. 止め輪、座金、ナット類

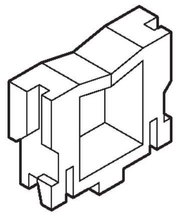
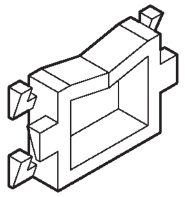
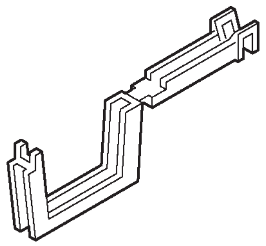
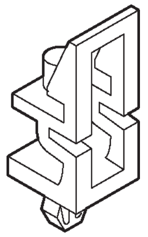
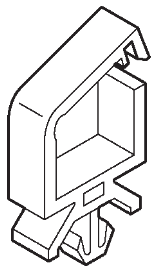
3. Stopper Rings, Washers, Nuts

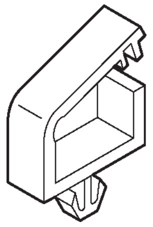
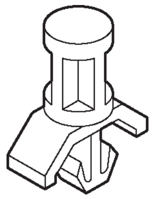
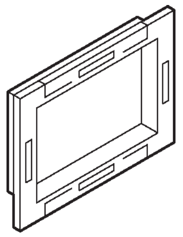
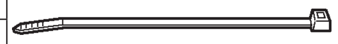
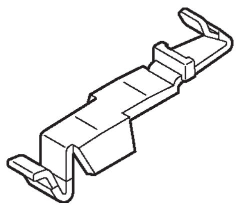
記号 Symbol	部品コード Parts code	参考情報 Reference information		
		形状 Shape	部品名称 Parts name	材質、処理など Material/treatment, etc.
Special Washer	309S0025		WW-16	
Special Washer	309S0077		STW-FT60-025	
Special Washer	315S0052		1480201-48040	
*E3	315S3360030		E 形止め輪 E ring	ステンレス 不動態化処理 Stainless steel Passive state treatment
*E4	315S3360040			
*E6	315S3360060			
KL3	315S0053		KL リング K-CL ring	
KL4	315S0050			
KL6	315S0051			
*SW4	309S0220004		ばね座金 Spring washer	ステンレス 不動態化処理 Stainless steel Passive state treatment
*SW8	309S0220008			
*W4	309S0120004		平座金 Plain washer	ステンレス 不動態化処理 Stainless steel Passive state treatment
*W8	309S0110008			

記号 Symbol	部品コード Parts code	参考情報 Reference information		
		形状 Shape	部品名称 Parts name	材質、処理など Material/treatment, etc.
*Na8	305S1110008		六角ナット Hexagon nut	ステンレス 不動態化処理 Stainless steel Passive state treatment

15 締結用および配線用のサービス部品一覧表
List of Service Parts for Securing and Wiring

4. 配線用部品
4. Wiring Parts

記号 Symbol	部品コード Parts code	参考情報 Reference information		
		形状 Shape	部品名称 Parts name	概略外形寸法など（mm） Approx. external dimensions (mm), etc.
EDS-0607U	316S2027		コードクランプ Code clamp	14x9x4 (WxHxD)
EDS-1	316S1121		コードクランプ Code clamp	20x10x4 (WxHxD)
EDS-2	316S1122			20x10x5 (WxHxD)
EDS-17L	318S1037		コードクランプ Code clamp	55x26x5 (WxHxD)
KGES6	316S0456		コードクランプ Code clamp	11x22x10 (WxHxD)
LWS-3S	316S1037		コードクランプ Code clamp	13x10x29 (WxHxD)
LWS-3S V0	316S1242			

記号 Symbol	部品コード Parts code	参考情報 Reference information		
		形状 Shape	部品名称 Parts name	概略外形寸法など（mm） Approx. external dimensions (mm), etc.
LAMS-05	318S1164		コードクランプ Code clamp	9x23x5 (WxHxD)
PCB-3S	316S0268		コードクランプ Code clamp	15x13x7 (WxHxD)
PCB-6S	316S0464			15x18x7 (WxHxD)
SB-4025	316S0029		コードクランプ Code clamp	48x33x6 (WxHxD)
T-18R	316S1001		束線部品 Cable tie	100x2.5 (LxW)
T-30R	316S1002			152x3.5 (LxW)
WPC-21SP	316S1263			23x11x11 (WxHxD)

15 締結用および配線用のサービス部品一覧表 List of Service Parts for Securing and Wiring

5. ［部品コード］→［記号］読替表

この表は、サービス部品納入時、サービス部品の部品コードをサービスマニュアル記載の記号に読替えるときに使用すること。

5. [Parts Code] to [Symbol] Conversion Table

Use this table for converting the parts code of delivered service parts to the symbols used in this Service Manual.

■ ねじ類 Screws

部品コード Parts code	記号 Symbol	部品コード Parts code	記号 Symbol
301S2000206	*N2x6	308S3420206	B2x6
301S2000408	*N4x8	308S9420512	BR5x12
301S4990304	V3x4	309S0025	WW-16
303S0102	WP3x4	309S0077	STW-FT60-025
304S1000820	*R8x20	315S0052	1480201-4804
306S0101	DT3x6		
308S0073	SCS-M4x10-F		
308S0401	BR3x6		
308S0403	BR3x10		
308S0404	BR3x12		
308S0406	BR4x8		
308S0411	BR4x25		
308S0414	TP3x6		
308S0424	TP4x8		
308S0426	TP4x12		
308S0431	BR3x22		
308S2780206	B2x6		
308S3380306	B3x6		
308S3380308	B3x8		
308S3380312	B3x12		
308S3380316	B3x16		

■ 止め輪、座金、ナット類 Stopper Rings, Washers, Nuts

部品コード Parts code	記号 Symbol
315S3360030	*E3
315S3360040	*E4
315S3360060	*E6
305S1110008	*Na8
309S0220004	*SW4
309S0220008	*SW8
309S0120004	*W4
309S0110008	*W8
315S0053	KL3
315S0050	KL4
315S0051	KL6

■ 配線用部品 Wiring Parts

部品コード Parts code	記号 Symbol
316S0029	SB-4025
316S0093	4EP-11
316S0146	BS-04
316S0268	PCB-3S
316S0456	KGES-6
316S0464	PCB-6S
316S1001	T-18R
316S1002	T-30R
316S1037	LWS-3S
316S1121	EDS-1
316S1122	EDS-2
316S1242	LWS-3S V0
316S1263	WPC-21SP
316S2027	EDS-0607U
318S1037	EDS-17L
318S1164	LAMS-05

Control Sheet

Issue date	Revision number	Reason	Pages affected
08.15.2005	00	New release (FM4683)	All pages
11.10.2005	01	Corrections (FM4750)	All pages

CR-IR 357 Service Manual

Preventive Maintenance (PM)

1. Preventive Maintenance Program

1.1 How To Use the Preventive Maintenance Volume

- Perform the relevant procedures in accordance with the interval notations (**1Y** **2Y** **3Y** **4Y** **5Y** **6Y**).
- "Preventive Maintenance Program List" is comprised of programs classified by intervals of one year (1Y), two years (2Y), three years (3Y), four years (4Y), five years (5Y), and six years (6Y). Since the maintenance programs differ depending upon the respective intervals, they should be performed according to the Program List.

1.2 Notations of Intervals

In this volume, either of the following symbols is indicated for each maintenance program. Before initiating any maintenance operation, you should become familiar with the following symbols.

1Y : Indicates a preventive maintenance program that must be performed when the machine has been used for one year or when a process count of about 20,000 is reached.

2Y : Indicates a preventive maintenance program that must be performed when the machine has been used for two years or when a process count of about 40,000 is reached.

3Y : Indicates a preventive maintenance program that must be performed when the machine has been used for three years or when a process count of about 60,000 is reached.

4Y : Indicates a preventive maintenance program that must be performed when the machine has been used for four years or when a process count of about 80,000 is reached.

5Y : Indicates a preventive maintenance program that must be performed when the machine has been used for five years or when a process count of about 100,000 is reached.

6Y : Indicates a preventive maintenance program that must be performed when the machine has been used for six years or when a process count of about 120,000 is reached.

◇ *REFERENCE* ◇

The above process counts are based on a maximum daily process count of 100.

1.3 Preventive Maintenance Program List

◆ *INSTRUCTION* ◆

Safety provided by grounding is assured by properly establishing power cable and additional protective ground wire connections and securing the parts with retaining screws. To maintain safety, ensure that the parts and retaining screws removed for servicing purposes are restored to states existing upon installation. After the parts and retaining screws are restored to the above-mentioned states, follow the procedures set forth in this service manual to verify that the retaining screws are securely tightened to properly secure the parts.

Perform the specified preventive maintenance programs at the predefined intervals or when the predefined process count is reached.
The preventive maintenance programs to be performed at various intervals are listed below.

1.3.1 Maintenance Programs for the First Year

- **Preventive maintenance programs to be performed when the machine has been used for one year or when a process count of about 20,000 is reached (1Y)**

Reference section	Maintenance program	Time requirements	Periodic replacement parts	Remarks
2. Details of Maintenance Procedures				
2.1	Backing Up the Log			
2.2	Checking the Error Log			
2.3	Checking the Erasure Lamp Lighting Time			
3. Checking the Image/Conveyance				
3.1	Check Before Procedures			
3.2	Checking the Image/Conveyance			
3.3	Checking the Output Characters			
4. Pulling Out the Machine				
4.1	Unlocking the Retainers			
4.2	Disconnecting the Cables			
5. Removing the Covers				
5.1	Removing the Covers (1st/5th Year)			
7. Cassette Set Unit				
7.1	Removing the Erasure Unit			
8. Erasure Unit				
8.1	Removing the Filter			
8.2	Cleaning the Filter			
8.4	Reinstalling the Filter			
8.5	Cleaning/Replacing the Brush Roller			
8.6	Reinstalling the Brush Roller Assembly			
8.8	Reinstalling the Reflection Plate			
8.9	Reinstalling the Erasure Unit			
13. Cleaning/Reinstalling the Covers and Louvers				
13.1	Cleaning/Reinstalling the Covers and Louvers (1st/5th Year)			
14.	Cleaning/Replacing the Air Filter			
15. Securing the Machine				
15.1	Connecting the Cables			
15.2	Securing the Machine			
15.3	Checking for Improper Protective Grounding			
16.	Checking the Image/Conveyance			
17.	Confirming the S Value			
18.	Checking the Error Log			

1.3.2 Maintenance Programs for the Second Year

- **Preventive maintenance programs to be performed when the machine has been used for two years or when a process count of about 40,000 is reached (2Y)**

Reference section	Maintenance program	Time requirements	Periodic replacement parts	Remarks
2. Details of Maintenance Procedures				
2.1	Backing Up the Log			
2.2	Checking the Error Log			
2.3	Checking the Erasure Lamp Lighting Time			
3. Checking the Image/Conveyance				
3.1	Check Before Procedures			
3.2	Checking the Image/Conveyance			
3.3	Checking the Output Characters			
4. Pulling Out the Machine				
4.1	Unlocking the Retainers			
4.2	Disconnecting the Cables			
5. Removing the Covers				
5.2	Removing the Covers (2nd/4th/6th Year)			
6.	Turning OFF the High-Voltage Switch			
7. Cassette Set Unit				
7.1	Removing the Erasure Unit			
7.2	Removing the Cassette Set Unit			
7.3	Preparation for Cleaning of Suction Cups			
7.4	Cleaning the Suction Cups (Left-Hand)			
7.5	Cleaning the Suction Cups (Right-Hand)			
7.6	Cleaning the Rubber Rollers (Small)			
7.7	Cleaning the Rubber Rollers			
7.8	Installing the Components			
7.9	Cleaning the Antistatic Member and Shutter			
7.12	Cleaning inside the Machine and the Antistatic Member			
7.13	Reinstalling the Cassette Set Unit			
7.14	Cleaning the Dust-Tight Cover Assembly			
8. Erasure Unit				
8.1	Removing the Filter			
8.3	Replacing the Filter		Filter	
8.4	Reinstalling the Filter			
8.5	Cleaning/Replacing the Brush Roller		Brush rollers (x2)	
8.6	Reinstalling the Brush Roller Assembly			
8.7	Cleaning the Reflection Plate			
8.8	Reinstalling the Reflection Plate			
8.9	Reinstalling the Erasure Unit			
9. Side-Positioning Conveyor Unit				
9.1	Removing the Side-Positioning Conveyor Unit			
9.2	Cleaning the Guide			
9.3	Cleaning the Rubber Rollers			
9.4	Cleaning the Shock-Absorbing Rollers, Antistatic Members, and Guide			
10. Subscanning Unit				
10.1	Removing the Post-Reading Conveyor Guide Assembly			
10.2	Removing the Light-Collecting Guide			
10.3	Removing the Scanning Optics Unit			
10.4	Removing the Subscanning Unit			
10.5	Cleaning the Guides, Center Rollers, and Rubber Rollers			
10.6	Cleaning the Flywheel (Large) and Kapton® Belt			
10.7	Cleaning the Flywheel (Small) and Rubber Belt			
10.8	Cleaning Inside the Machine			
10.9	Reinstalling the Subscanning Unit			
10.10	Reinstalling the Scanning Optics Unit			
11. Light-Collecting Guide				
11.1	Cleaning and Reinstalling the Light-Collecting Guide			

Reference section	Maintenance program	Time requirements	Periodic replacement parts	Remarks
11.2	Cleaning the Post-Reading Conveyor Guide Assembly			
11.3	Reinstalling the Post-Reading Conveyor Guide Assembly			
11.4	Reinstalling the Side-Positioning Conveyor Unit			
12.	Turning ON the High-Voltage Switch			
13. Cleaning/Reinstalling the Covers and Louvers				
13.2	Cleaning/Reinstalling the Covers and Louvers (2nd/4th/6th Year)			
14.	Cleaning/Replacing the Air Filter		Air filter	
15. Securing the Machine				
15.1	Connecting the Cables			
15.2	Securing the Machine			
15.3	Checking for Improper Protective Grounding			
16.	Checking the Image/Conveyance			
17.	Confirming the S Value			
18.	Checking the Error Log			

- **Parts to be replaced when the machine has been used for two years or when a process count of about 40,000 is reached**

Reference section	Parts Name	Parts No.	Qty.	Remarks
8.3	Filter	603Y0070*	1	
8.5	Brush roller	334N5027*	2	
14.	Air filter	376N0240*	1	

1.3.3 Maintenance Programs for the Third Year

- **Preventive maintenance programs to be performed when the machine has been used for three years or when a process count of about 60,000 is reached (3Y)**

Reference section	Maintenance program	Time requirements	Periodic replacement parts	Remarks
2. Details of Maintenance Procedures				
2.1	Backing Up the Log			
2.2	Checking the Error Log			
2.3	Checking the Erasure Lamp Lighting Time			
3.Checking the Image/Conveyance				
3.1	Check Before Procedures			
3.2	Checking the Image/Conveyance			
3.3	Checking the Output Characters			
4. Pulling Out the Machine				
4.1	Unlocking the Retainers			
4.2	Disconnecting the Cables			
5. Removing the Covers				
5.3	Removing the Covers (3rd Year)			
7. Cassette Set Unit				
7.1	Removing the Erasure Unit			
7.15	Replacing the IP Suction Pump		IP suction pump	
8. Erasure Unit				
8.1	Removing the Filter			
8.2	Cleaning the Filter			
8.4	Reinstalling the Filter			
8.5	Cleaning/Replacing the Brush Roller			
8.6	Reinstalling the Brush Roller Assembly			
8.8	Reinstalling the Reflection Plate			
8.9	Reinstalling the Erasure Unit			
13. Cleaning/Reinstalling the Covers and Louvers				
13.3	Cleaning/Reinstalling the Covers and Louvers (3rd Year)			
14.	Cleaning/Replacing the Air Filter			
15.Securing the Machine				
15.1	Connecting the Cables			
15.2	Securing the Machine			
15.3	Checking for Improper Protective Grounding			
16.	Checking the Image/Conveyance			
17.	Confirming the S Value			
18.	Checking the Error Log			

- **Parts to be replaced when the machine has been used for three years or when a process count of about 60,000 is reached**

Reference section	Parts Name	Parts No.	Qty.	Remarks
7.15	IP suction pump	133Y2034*	1	

1.3.4 Maintenance Programs for the Fourth Year

- **Preventive maintenance programs to be performed when the machine has been used for four years or when a process count of about 80,000 is reached (4Y)**

Reference section	Maintenance program	Time requirements	Periodic replacement parts	Remarks
2. Details of Maintenance Procedures				
2.1	Backing Up the Log			
2.2	Checking the Error Log			
2.3	Checking the Erasure Lamp Lighting Time			
3. Checking the Image/Conveyance				
3.1	Check Before Procedures			
3.2	Checking the Image/Conveyance			
3.3	Checking the Output Characters			
4. Pulling Out the Machine				
4.1	Unlocking the Retainers			
4.2	Disconnecting the Cables			
5. Removing the Covers				
5.2	Removing the Covers (2nd/4th/6th Year)			
6.	Turning OFF the High-Voltage Switch			
7. Cassette Set Unit				
7.1	Removing the Erasure Unit			
7.2	Removing the Cassette Set Unit			
7.3	Preparation for Cleaning of Suction Cups			
7.4	Cleaning the Suction Cups (Left-Hand)			
7.5	Cleaning the Suction Cups (Right-Hand)			
7.6	Cleaning the Rubber Rollers (Small)			
7.7	Cleaning the Rubber Rollers			
7.8	Installing the Components			
7.9	Cleaning the Antistatic Member and Shutter			
7.10	Replacing the Dumper (Opposite Reference Side)		Dumper (opposite reference side)	
7.11	Replacing the Dumper (Reference Side)		Dumper (reference side)	
7.12	Cleaning inside the Machine and the Antistatic Member			
7.13	Reinstalling the Cassette Set Unit			
7.14	Cleaning the Dust-Tight Cover Assembly			
8. Erasure Unit				
8.1	Removing the Filter			
8.3	Replacing the Filter		Filter	
8.4	Reinstalling the Filter			
8.5	Cleaning/Replacing the Brush Roller		Brush rollers (x2)	
8.6	Reinstalling the Brush Roller Assembly			
8.7	Cleaning the Reflection Plate			
8.8	Reinstalling the Reflection Plate			
8.9	Reinstalling the Erasure Unit			
9. Side-Positioning Conveyor Unit				
9.1	Removing the Side-Positioning Conveyor Unit			
9.2	Cleaning the Guide			
9.3	Cleaning the Rubber Rollers			
9.4	Cleaning the Shock-Absorbing Rollers, Antistatic Members, and Guide			
10. Subscanning Unit				
10.1	Removing the Post-Reading Conveyor Guide Assembly			
10.2	Removing the Light-Collecting Guide			
10.3	Removing the Scanning Optics Unit			
10.4	Removing the Subscanning Unit			
10.5	Cleaning the Guides, Center Rollers, and Rubber Rollers			
10.6	Cleaning the Flywheel (Large) and Kapton® Belt			
10.7	Cleaning the Flywheel (Small) and Rubber Belt			
10.8	Cleaning Inside the Machine			
10.9	Reinstalling the Subscanning Unit			
10.10	Reinstalling the Scanning Optics Unit			

Reference section		Maintenance program	Time requirements	Periodic replacement parts	Remarks
11. Light-Collecting Guide					
	11.1	Cleaning and Reinstalling the Light-Collecting Guide			
	11.2	Cleaning the Post-Reading Conveyor Guide Assembly			
	11.3	Reinstalling the Post-Reading Conveyor Guide Assembly			
	11.4	Reinstalling the Side-Positioning Conveyor Unit			
12.		Turning ON the High-Voltage Switch			
13. Cleaning/Reinstalling the Covers and Louvers					
	13.2	Cleaning/Reinstalling the Covers and Louvers (2nd/4th/6th Year)			
14.		Cleaning/Replacing the Air Filter		Air filter	
15. Securing the Machine					
	15.1	Connecting the Cables			
	15.2	Securing the Machine			
	15.3	Checking for Improper Protective Grounding			
16.		Checking the Image/Conveyance			
17.		Confirming the S Value			
18.		Checking the Error Log			

- **Parts to be replaced when the machine has been used for four years or when a process count of about 80,000 is reached**

Reference section	Parts Name	Parts No.	Qty.	Remarks
7.10	Dumper (opposite reference side)	386N1304*	1	
7.11	Dumper (reference side)	386N1303*	1	
8.3	Filter	603Y0070*	1	
8.5	Brush roller	334N5027*	2	
14.	Air filter	376N0240*	1	

1.3.5 Maintenance Programs for the Fifth Year

- **Preventive maintenance programs to be performed when the machine has been used for five years or when a process count of about 100,000 is reached (5Y)**

Reference section	Maintenance program	Time requirements	Periodic replacement parts	Remarks
2. Details of Maintenance Procedures				
2.1	Backing Up the Log			
2.2	Checking the Error Log			
2.3	Checking the Erasure Lamp Lighting Time			
3. Checking the Image/Conveyance				
3.1	Check Before Procedures			
3.2	Checking the Image/Conveyance			
3.3	Checking the Output Characters			
4. Pulling Out the Machine				
4.1	Unlocking the Retainers			
4.2	Disconnecting the Cables			
5. Removing the Covers				
5.1	Removing the Covers (1st/5th Year)			
7. Cassette Set Unit				
7.1	Removing the Erasure Unit			
8. Erasure Unit				
8.1	Removing the Filter			
8.2	Cleaning the Filter			
8.4	Reinstalling the Filter			
8.5	Cleaning/Replacing the Brush Roller			
8.6	Reinstalling the Brush Roller Assembly			
8.8	Reinstalling the Reflection Plate			
8.9	Reinstalling the Erasure Unit			
13. Cleaning/Reinstalling the Covers and Louvers				
13.1	Cleaning/Reinstalling the Covers and Louvers (1st/5th Year)			
14.	Cleaning/Replacing the Air Filter			
15. Securing the Machine				
15.1	Connecting the Cables			
15.2	Securing the Machine			
15.3	Checking for Improper Protective Grounding			
16.	Checking the Image/Conveyance			
17.	Confirming the S Value			
18.	Checking the Error Log			

1.3.6 Maintenance Programs for the Sixth Year

- **Preventive maintenance programs to be performed when the machine has been used for six years or when a process count of about 120,000 is reached (6Y)**

Reference section	Maintenance program	Time requirements	Periodic replacement parts	Remarks
2. Details of Maintenance Procedures				
2.1	Backing Up the Log			
2.2	Checking the Error Log			
2.3	Checking the Erasure Lamp Lighting Time			
3. Checking the Image/Conveyance				
3.1	Check Before Procedures			
3.2	Checking the Image/Conveyance			
3.3	Checking the Output Characters			
4. Pulling Out the Machine				
4.1	Unlocking the Retainers			
4.2	Disconnecting the Cables			
5. Removing the Covers				
5.2	Removing the Covers (2nd/4th/6th Year)			
6.	Turning OFF the High-Voltage Switch			
7. Cassette Set Unit				
7.1	Removing the Erasure Unit			
7.2	Removing the Cassette Set Unit			
7.3	Preparation for Cleaning of Suction Cups			
7.4	Cleaning the Suction Cups (Left-Hand)			
7.5	Cleaning the Suction Cups (Right-Hand)			
7.6	Cleaning the Rubber Rollers (Small)			
7.7	Cleaning the Rubber Rollers			
7.8	Installing the Components			
7.9	Cleaning the Antistatic Member and Shutter			
7.12	Cleaning inside the Machine and the Antistatic Member			
7.13	Reinstalling the Cassette Set Unit			
7.14	Cleaning the Dust-Tight Cover Assembly			
7.15	Replacing the IP Suction Pump		IP suction pump	
8. Erasure Unit				
8.1	Removing the Filter			
8.3	Replacing the Filter		Filter	
8.4	Reinstalling the Filter			
8.5	Cleaning/Replacing the Brush Roller		Brush rollers (x2)	
8.6	Reinstalling the Brush Roller Assembly			
8.7	Cleaning the Reflection Plate			
8.8	Reinstalling the Reflection Plate			
8.9	Reinstalling the Erasure Unit			
9. Side-Positioning Conveyor Unit				
9.1	Removing the Side-Positioning Conveyor Unit			
9.2	Cleaning the Guide			
9.3	Cleaning the Rubber Rollers			
9.4	Cleaning the Shock-Absorbing Rollers, Antistatic Members, and Guide			
10. Subscanning Unit				
10.1	Removing the Post-Reading Conveyor Guide Assembly			
10.2	Removing the Light-Collecting Guide			
10.3	Removing the Scanning Optics Unit			
10.4	Removing the Subscanning Unit			
10.5	Cleaning the Guides, Center Rollers, and Rubber Rollers			
10.6	Cleaning the Flywheel (Large) and Kapton® Belt			
10.7	Cleaning the Flywheel (Small) and Rubber Belt			
10.8	Cleaning Inside the Machine			
10.9	Reinstalling the Subscanning Unit			
10.10	Reinstalling the Scanning Optics Unit			
11. Light-Collecting Guide				
11.1	Cleaning and Reinstalling the Light-Collecting Guide			

Reference section	Maintenance program	Time requirements	Periodic replacement parts	Remarks
11.2	Cleaning the Post-Reading Conveyor Guide Assembly			
11.3	Reinstalling the Post-Reading Conveyor Guide Assembly			
11.4	Reinstalling the Side-Positioning Conveyor Unit			
12.	Turning ON the High-Voltage Switch			
13. Cleaning/Reinstalling the Covers and Louvers				
13.2	Cleaning/Reinstalling the Covers and Louvers (2nd/4th/6th Year)			
14.	Cleaning/Replacing the Air Filter		Air filter	
15. Securing the Machine				
15.1	Connecting the Cables			
15.2	Securing the Machine			
15.3	Checking for Improper Protective Grounding			
16.	Checking the Image/Conveyance			
17.	Confirming the S Value			
18.	Checking the Error Log			

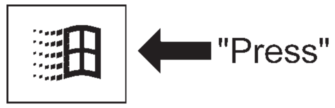
- **Parts to be replaced when the machine has been used for six years or when a process count of about 120,000 is reached**

Reference section	Parts Name	Parts No.	Qty.	Remarks
7.15	IP suction pump	133Y2034*	1	
8.3	Filter	603Y0070*	1	
8.5	Brush roller	334N5027*	2	
14.	Air filter	376N0240*	1	

2. Details of Maintenance Procedures

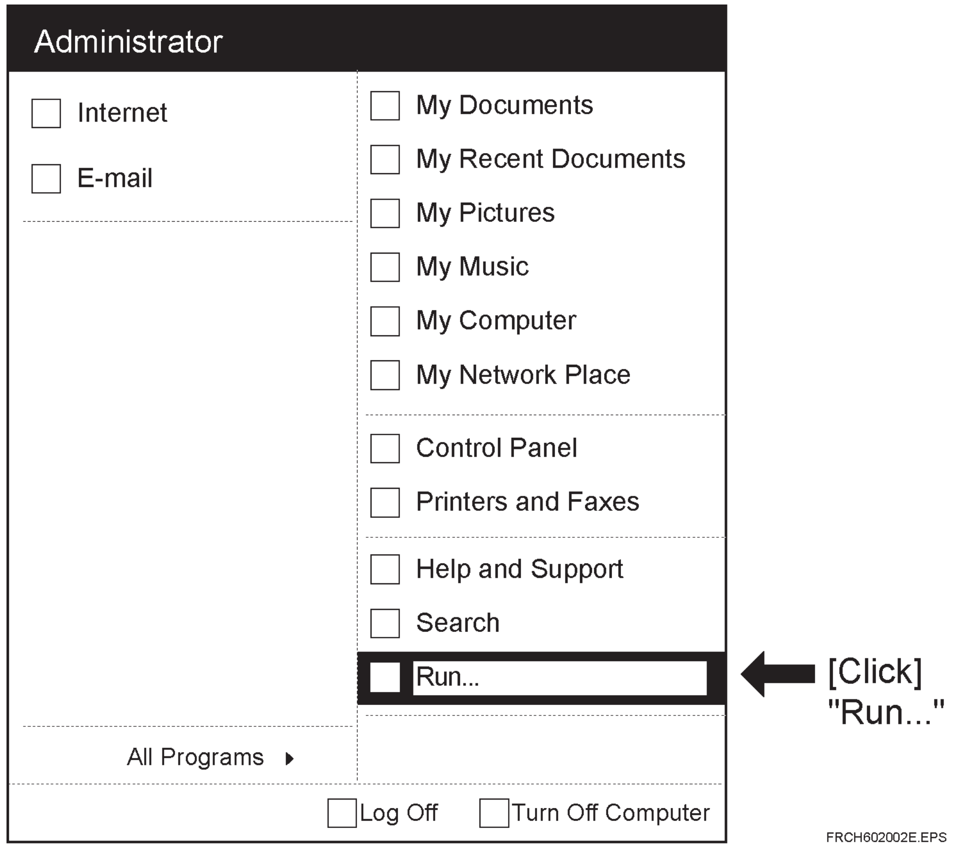
2.1 Backing Up the Log

1. **Power ON the CR Console.**
2. **Power ON the RU.**
3. **Press the [Windows] key to display the Start menu of Windows.**



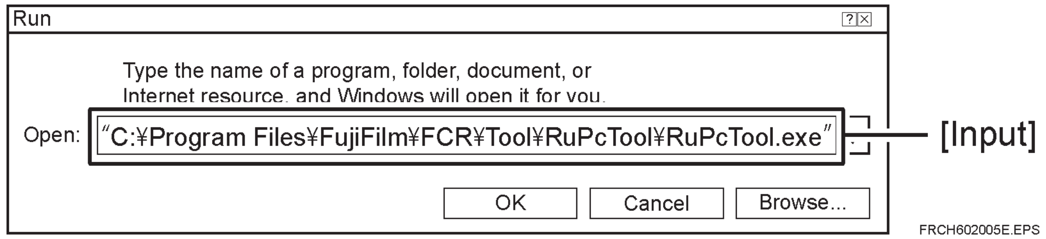
FRCH602001.EPS

4. **Click [Run...] from the Start menu of Windows.**


Administrator
☐ Internet
☐ E-mail
All Programs ▸
☐ My Documents
☐ My Recent Documents
☐ My Pictures
☐ My Music
☐ My Computer
☐ My Network Place
☐ Control Panel
☐ Printers and Faxes
☐ Help and Support
☐ Search
☐ Run...
☐Log Off
☐Turn Off Computer
[Click]
"Run..."

FRCH602002E.EPS

5. **Input "C:\Program Files\FujiFilm\FCR\Tool\PuPcTool\RuPcTool.exe" in "Name".**


Run
OK
Cancel
Browse...
[Input]

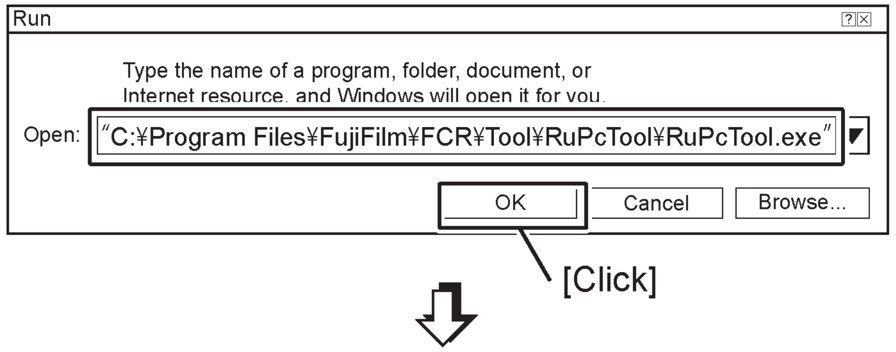
Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.

Open: "C:¥Program Files¥FujiFilm¥FCR¥Tool¥RuPcTool¥RuPcTool.exe"

FRCH602005E.EPS

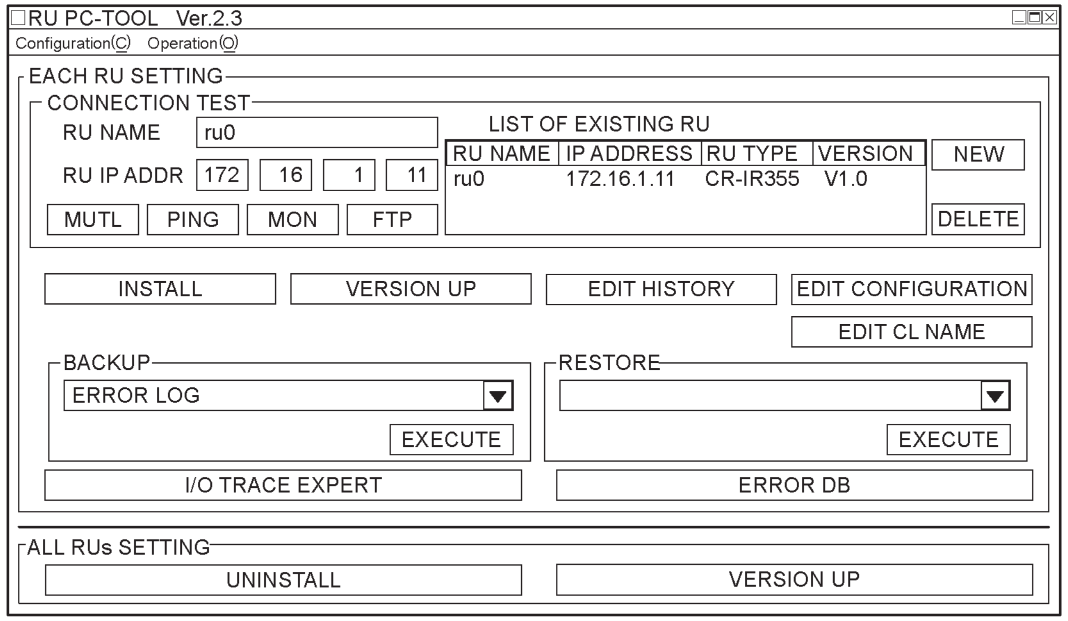
6. **Click on [OK].**

→ The RU PC-TOOL window opens.


Run
OK
Cancel
Browse...
[Click]

Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.

Open: "C:¥Program Files¥FujiFilm¥FCR¥Tool¥RuPcTool¥RuPcTool.exe"


RU PC-TOOL Ver.2.3
Configuration(C) Operation(O)
EACH RU SETTING
CONNECTION TEST
MUTL
PING
MON
FTP
LIST OF EXISTING RU
NEW
DELETE
INSTALL
VERSION UP
EDIT HISTORY
EDIT CONFIGURATION
EDIT CL NAME
BACKUP
EXECUTE
RESTORE
EXECUTE
I/O TRACE EXPERT
ERROR DB
ALL RUs SETTING
UNINSTALL
VERSION UP

RU NAME: ru0

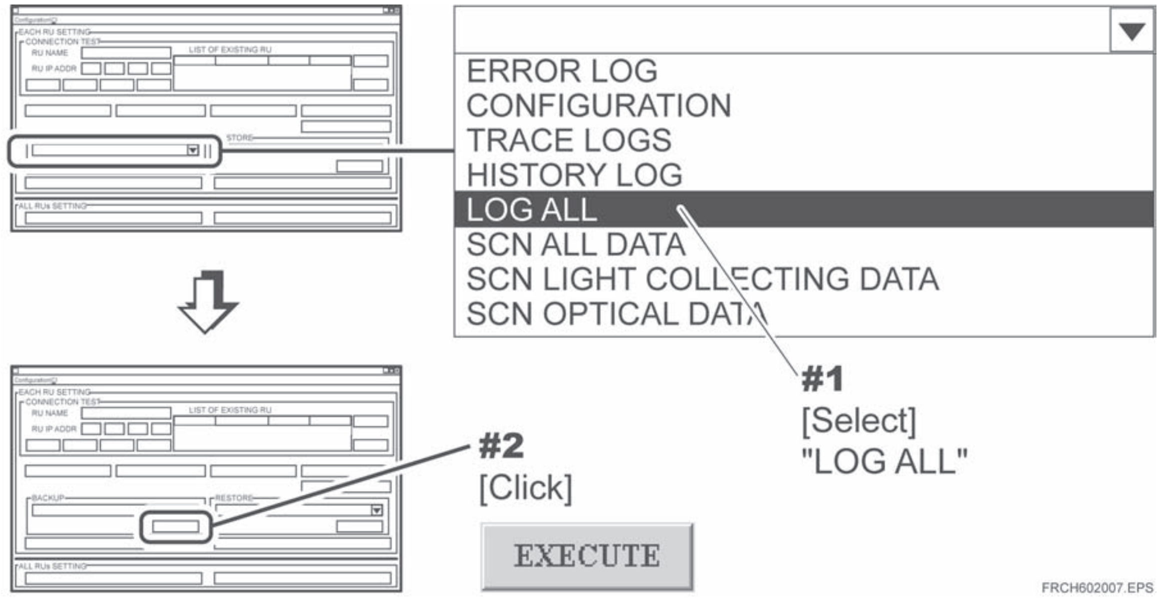
RU IP ADDR: 172 . 16 . 1 . 11

RU NAME	IP ADDRESS	RU TYPE	VERSION
ru0	172.16.1.11	CR-IR355	V1.0

BACKUP: ERROR LOG

FRCH602015.EPS

7. **Select “LOG-ALL” from the BACKUP items, and click on [EXECUTE].**

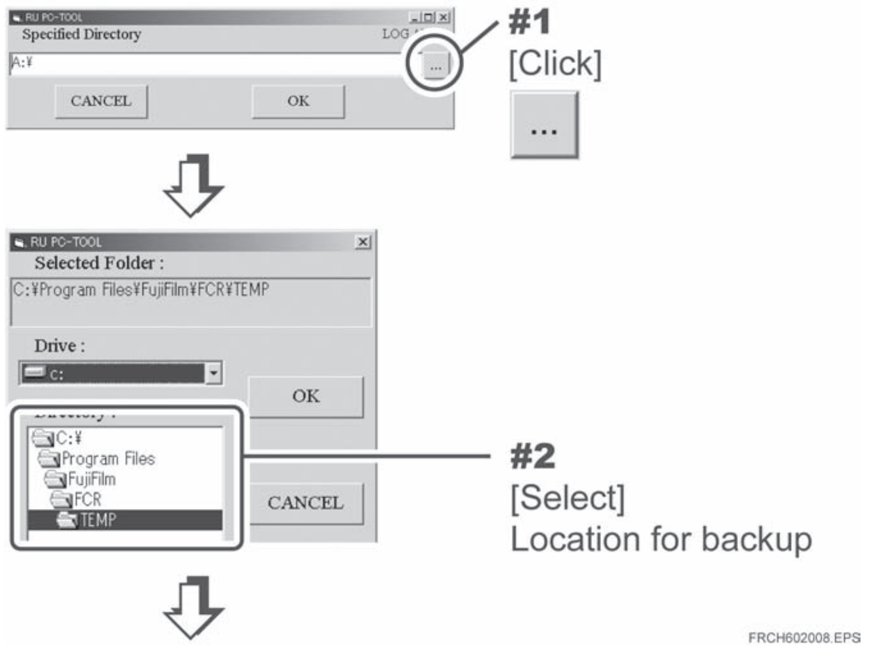

ERROR LOG
CONFIGURATION
TRACE LOGS
HISTORY LOG
LOG ALL
SCN ALL DATA
SCN LIGHT COLLECTING DATA
SCN OPTICAL DATA
#1
[Select]
"LOG ALL"
#2
[Click]
EXECUTE
FRCH602007.EPS

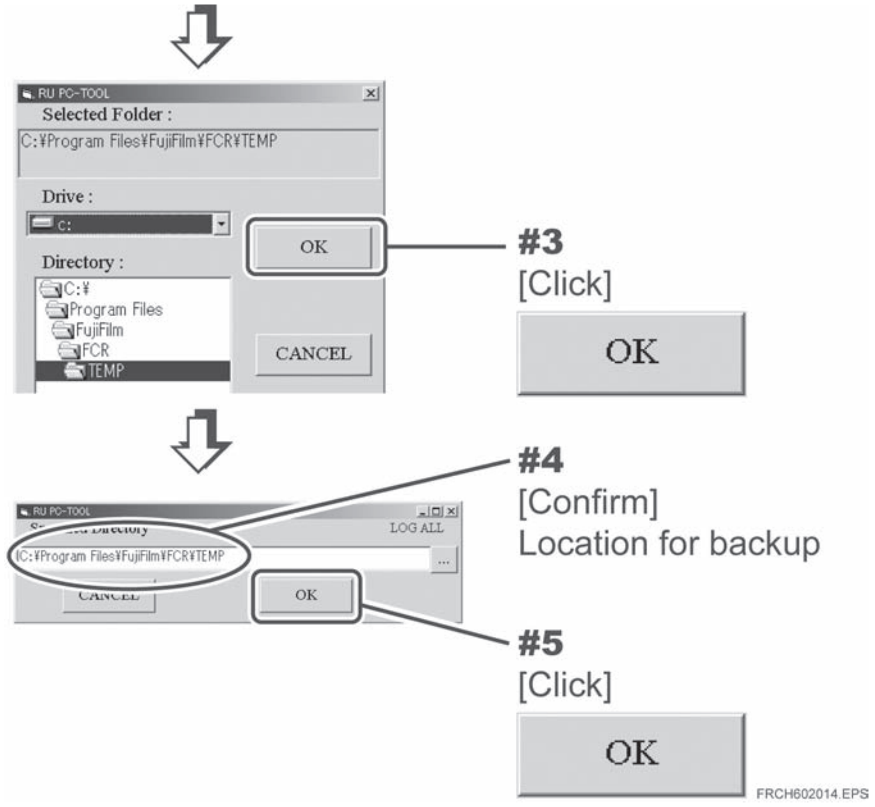
→ The window for selecting the location for backing up the data appears.

8. **Click on [...] and select the location (drive and directory) where the data is to be backed up. After making the selection, click on [OK]. Confirm the location for backing up the data, and then click on [OK].**

◆ *NOTE* ◆

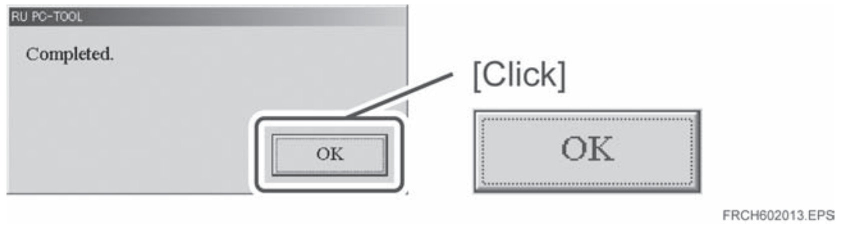
When the data is to be backed up on an FD, set a formatted FD into the CR Console FD drive before selecting the location for backup. If you click on [OK] without setting the FD, the error window appears.


RU PC-TOOL
Specified Directory
A:¥
CANCEL
OK
#1
[Click]
...
RU PC-TOOL
Selected Folder :
C:¥Program Files¥FujiFilm¥FCR¥TEMP
Drive :
c:
OK
CANCEL
C:¥
Program Files
FujiFilm
FCR
TEMP
#2
[Select]
Location for backup
FRCH602008.EPS


RU PC-TOOL
Selected Folder :
C:¥Program Files¥FujiFilm¥FCR¥TEMP
Drive :
c:
OK
Directory :
C:¥
Program Files
FujiFilm
FCR
TEMP
CANCEL
#3
[Click]
OK
RU PC-TOOL
LOG ALL
C:¥Program Files¥FujiFilm¥FCR¥TEMP
OK
#4
[Confirm]
Location for backup
#5
[Click]
OK
FRCH602014.EPS

→ The Completed window appears after backup is completed.

9. **Click on [OK].**

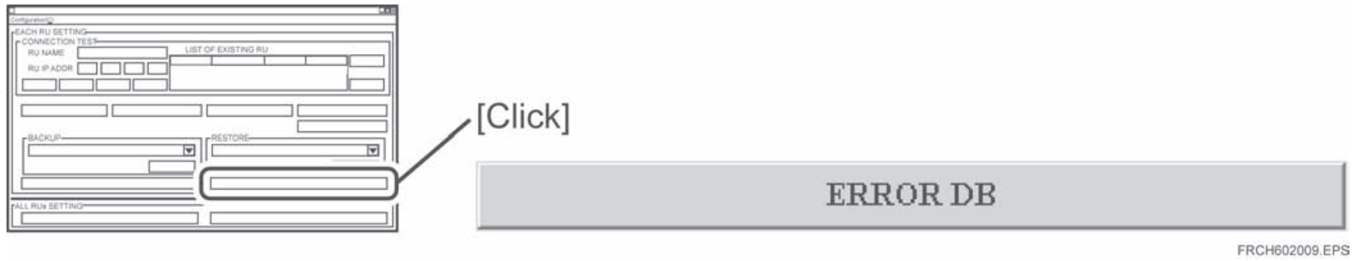

RU PC-TOOL

Completed.
OK
[Click]
OK
FRCH602013.EPS

→ The display returns to the RU PC-TOOL window.

2.2 Checking the Error Log

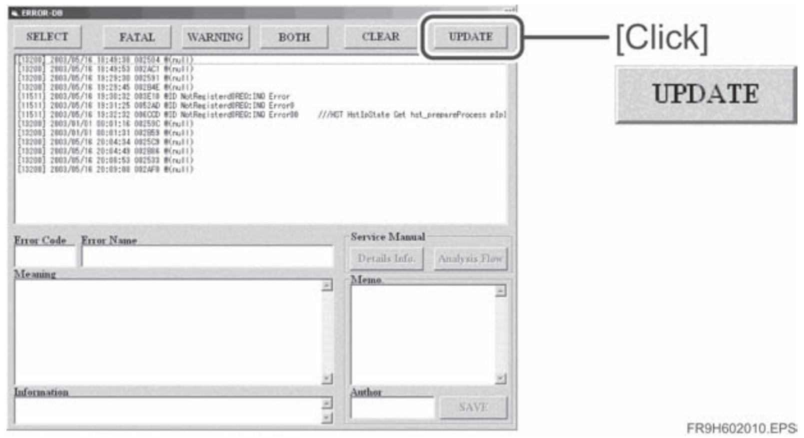
1. Click on [ERROR DB].


[Click]
ERROR DB

FRCH602009.EPS

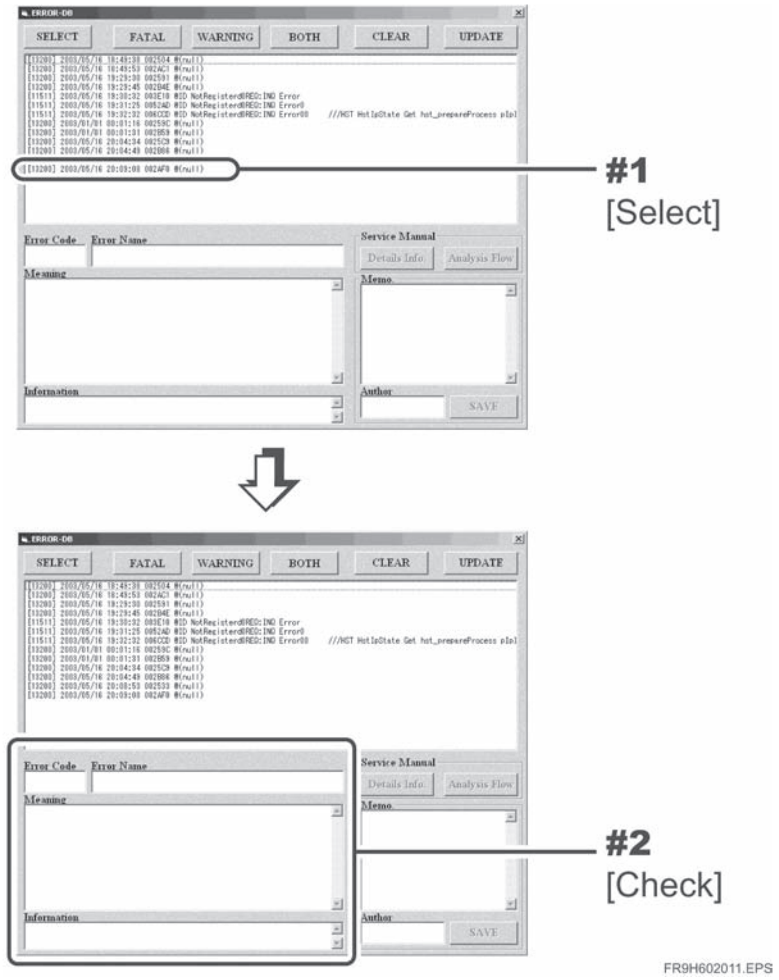
→ The ERROR-DB window opens.

2. Click on [UPDATE].


SELECT
FATAL
WARNING
BOTH
CLEAR
UPDATE
[Click]
UPDATE
Error Code
Error Name
Service Manual
Details Info
Analysis Flow
Meaning
Memo
Information
Author
SAVE

FR9H602010.EPS

3. Select the log, and check to make sure that the error log is not abnormal.


SELECT
FATAL
WARNING
BOTH
CLEAR
UPDATE
#1
[Select]
Error Code
Error Name
Service Manual
Details Info
Analysis Flow
Meaning
Memo
Information
Author
SAVE
#2
[Check]

FR9H602011.EPS

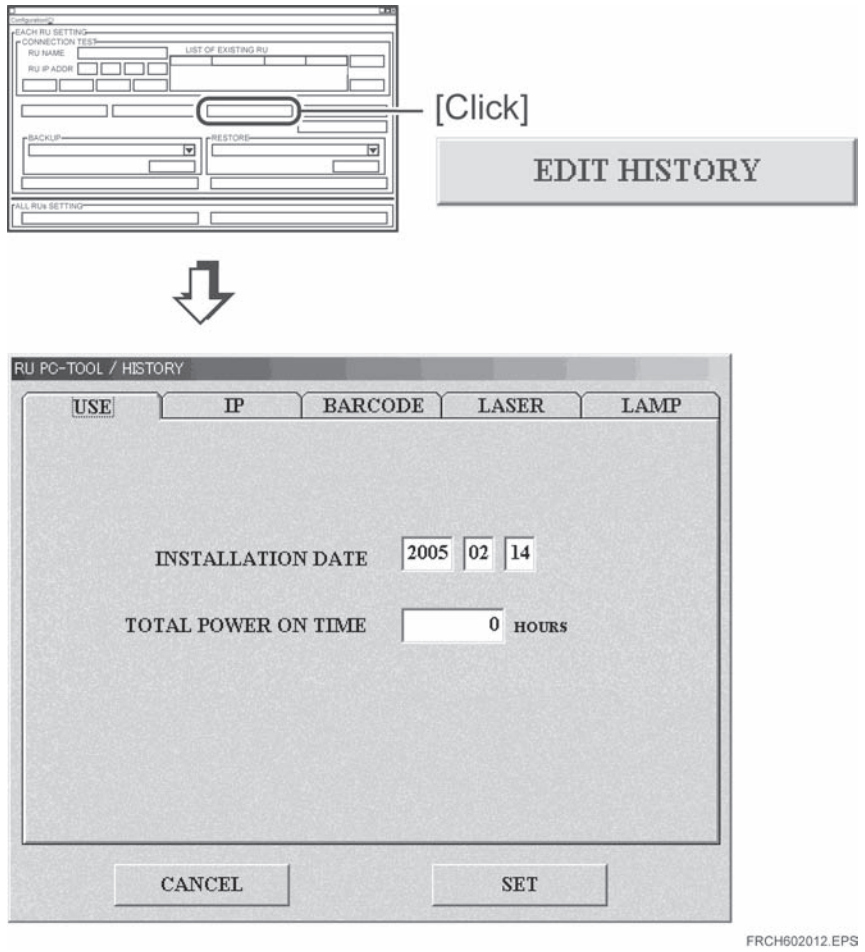
4. Click on ☒.

→ The display returns to the RU PC-TOOL window.

2.3 Checking the Erasure Lamp Lighting Time

1. **Click on [EDIT HISTORY].**

→ The EDIT HISTORY window opens.


[Click]

RU PC-TOOL / HISTORY

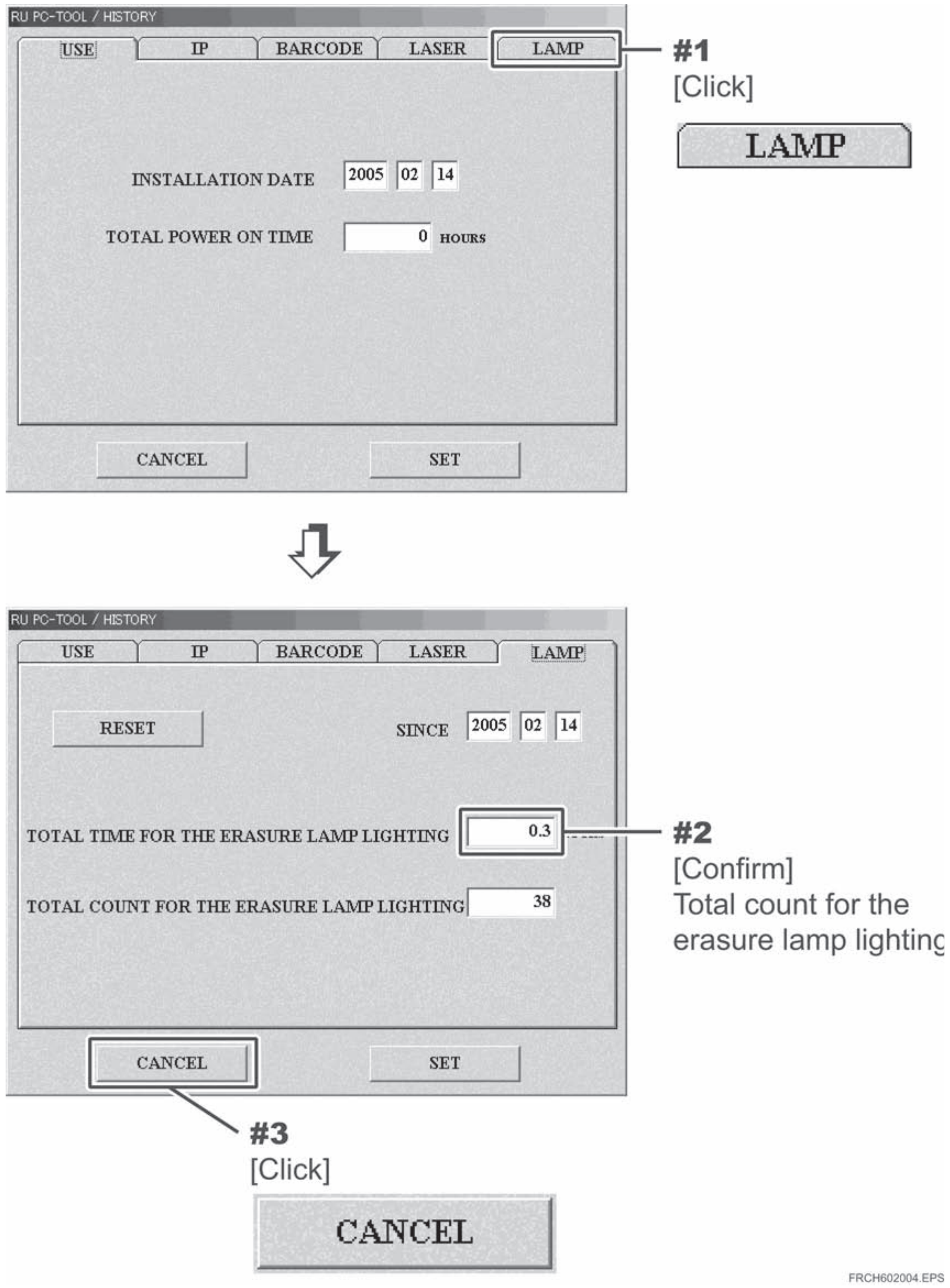
INSTALLATION DATE 2005 02 14

TOTAL POWER ON TIME 0 HOURS

EDIT HISTORY
USE
IP
BARCODE
LASER
LAMP
CANCEL
SET

FRCH602012.EPS

2. **Click on the [LAMP] tab, and confirm the total count for the erasure lamp lighting. After the confirmation, click on [CANCEL].**


#1
[Click]

RU PC-TOOL / HISTORY

INSTALLATION DATE 2005 02 14

TOTAL POWER ON TIME 0 HOURS

SINCE 2005 02 14

TOTAL TIME FOR THE ERASURE LAMP LIGHTING 0.3

TOTAL COUNT FOR THE ERASURE LAMP LIGHTING 38

#2
[Confirm]
Total count for the erasure lamp lighting

#3
[Click]

LAMP
USE
IP
BARCODE
LASER
LAMP
RESET
CANCEL
SET
CANCEL

FRCH602004.EPS

→ The display returns to the RU PC-TOOL window.

3. Checking the Image/Conveyance

The following checks are made in this section.
- Conveyance checks
- Image checks
- Check for output characters

3.1 Check Before Procedures

◆ NOTES ◆

- *For the IP used for image/conveyance checks, an IP of the maximum size used in the user's site should be employed.*
- *Make sure that the IP to be used does not contain any important image data exposed.*

1. **Turn OFF the RU power, and then turn it ON.**
2. **Make sure that the RU normally starts up, and the operation panel turns to the "READY" window.**
3. **Perform "Secondary Erasure" on the spontaneous radiation and images accumulated on the IP to be used.**

   ☞ **{Instruction Manual}**
4. **Perform IP exposures.**

   ◆ INSTRUCTIONS ◆

   - *Expose two IPs of maximum sizes to be used at the user's site to the following doses.*
   - *With the X-ray tube, the first IP should be exposed in a normal orientation, and the second in a 180-degree upside-down orientation.*

   - X-ray tube: Tungsten X-ray tube
   - Exposure X-ray dose: 1 mR
   - Maximum size: IP of 14" x 14" (35 cm x 35 cm) or 14" x 17" (35 cm x 43 cm) size
   - Reference conditions: Distance 1.8 m
     Voltage 80 kVp
     Amperage 50 mA
     Time 0.013 sec

3.2 Checking the Image/Conveyance

1. **Read the IP, which was exposed as instructed in "3.1 Check Before Procedures," by "TEST", "Image format" or "Image format-2" and "SINGLE", and output it.**

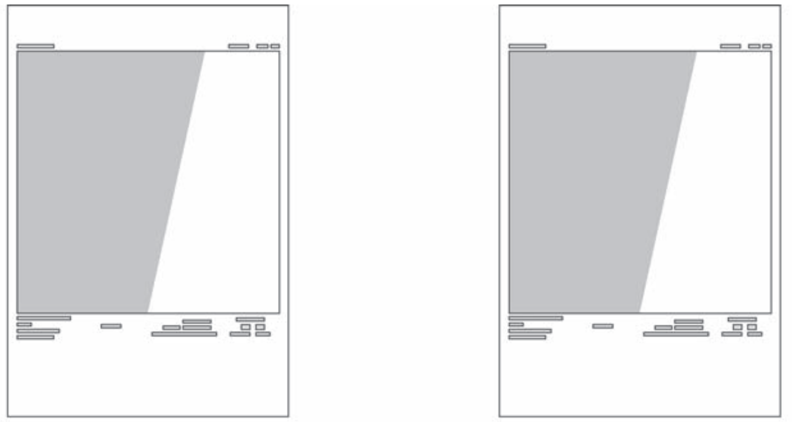
2. **Verify that there is no "unusual nonuniformity" found on the output film or on the image displayed on the image monitor.**

◆ CHECK ◆

There should be no uneven density difference in the main scan direction.

If there is any uneven density difference, compare the films outputted from the two IPs of the same size, and determine whether such nonuniformity is caused by the machine or X-ray tube.

- **If there is uneven density difference in the same direction on two films**



IP in normal orientation (first IP)

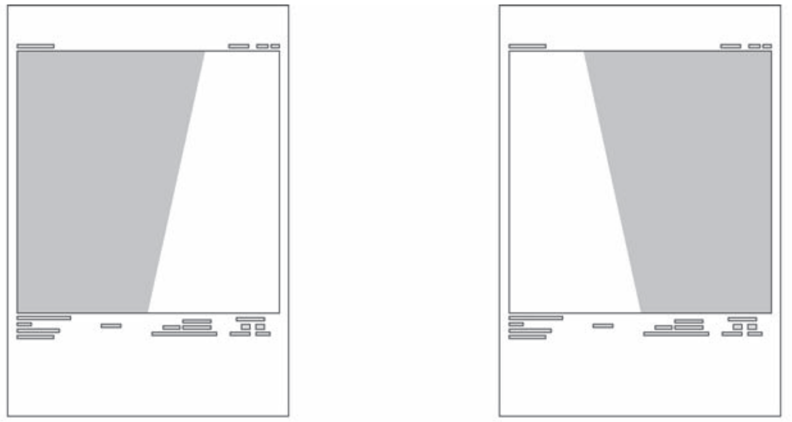
IP in 180-degree upside-down orientation (second IP)

FRCH603002.EPS

→ The machine may be the cause of such nonuniformity.

☞ **{Troubleshooting}**

- **If positions of uneven density difference are different**



IP in normal orientation (first IP)

IP in 180-degree upside-down orientation (second IP)

FRCH603003.EPS

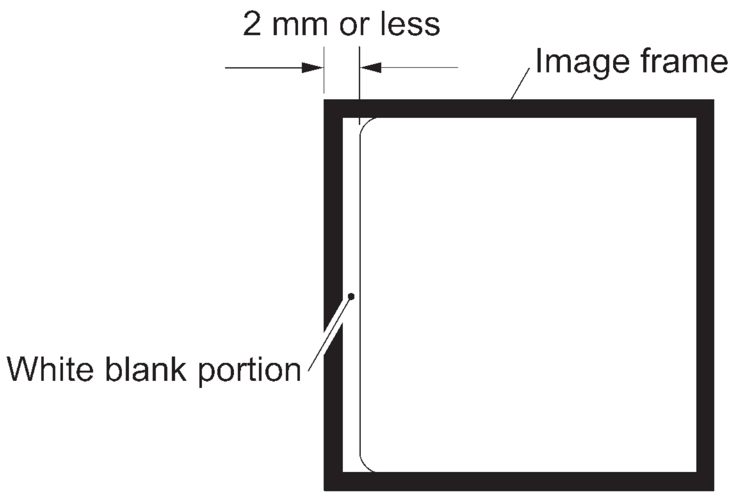
→ The X-ray tube may be the cause of such nonuniformity.

3. **Check the image format.**

Make sure that the white blank portion is 2 mm or less, as actually measured on the IP, from the outermost edge of the image frame of the film outputted.

◆ CHECK ◆

The white blank portion should be 2 mm or less.
If anything abnormal is found:
☞ ***{Troubleshooting}***



FRCH603004.EPS

◆ NOTE ◆

The distance measured on the film may differ from the actual size on the IP, depending on the reading size and film size. The actual size on the IP should be calculated using the distance measured on the film and the reduction factor for the film. Compute the actual size on the IP according to the following equation.

$$\text{Actual size on IP} = \text{Measured value} \times \frac{100}{\text{Reduction factor (\%)}}$$

FRCH603005.EPS

3.3 Checking the Output Characters

Make sure that the film character format information that was set in “Outputting the Film for Image Check” is displayed on the output film. Also verify that none of the characters look blurred or broken.

1. Check the output characters.

◆ *INSTRUCTION* ◆

Check the following.

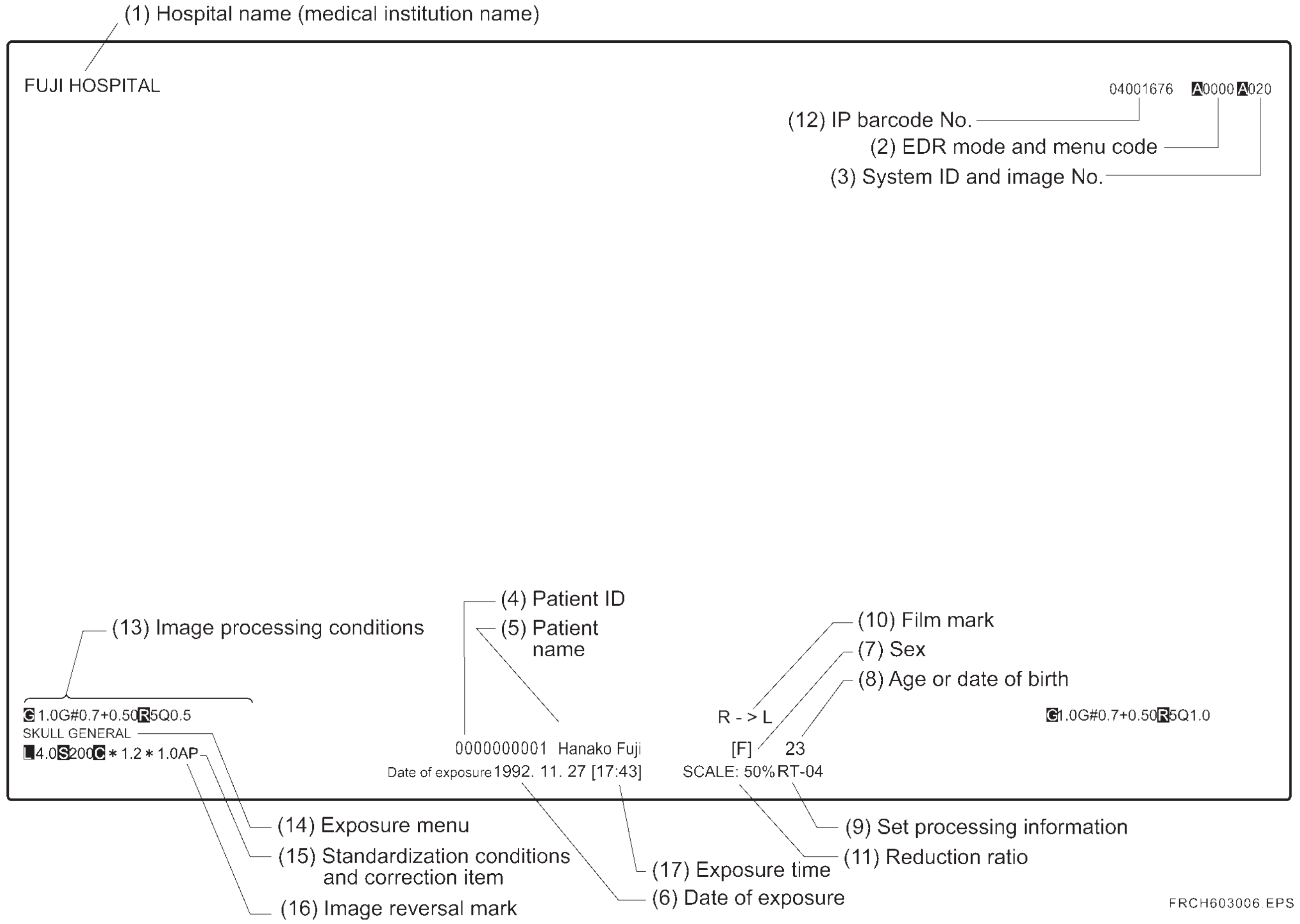
- *The character format information that has been set is correct.*
- *There is nothing abnormal,such as blurred or broken characters.*

If anything abnormal is found:

☞ ***{Troubleshooting}***

◇ *REFERENCE* ◇

The details of output characters and the character display locations are as follows.

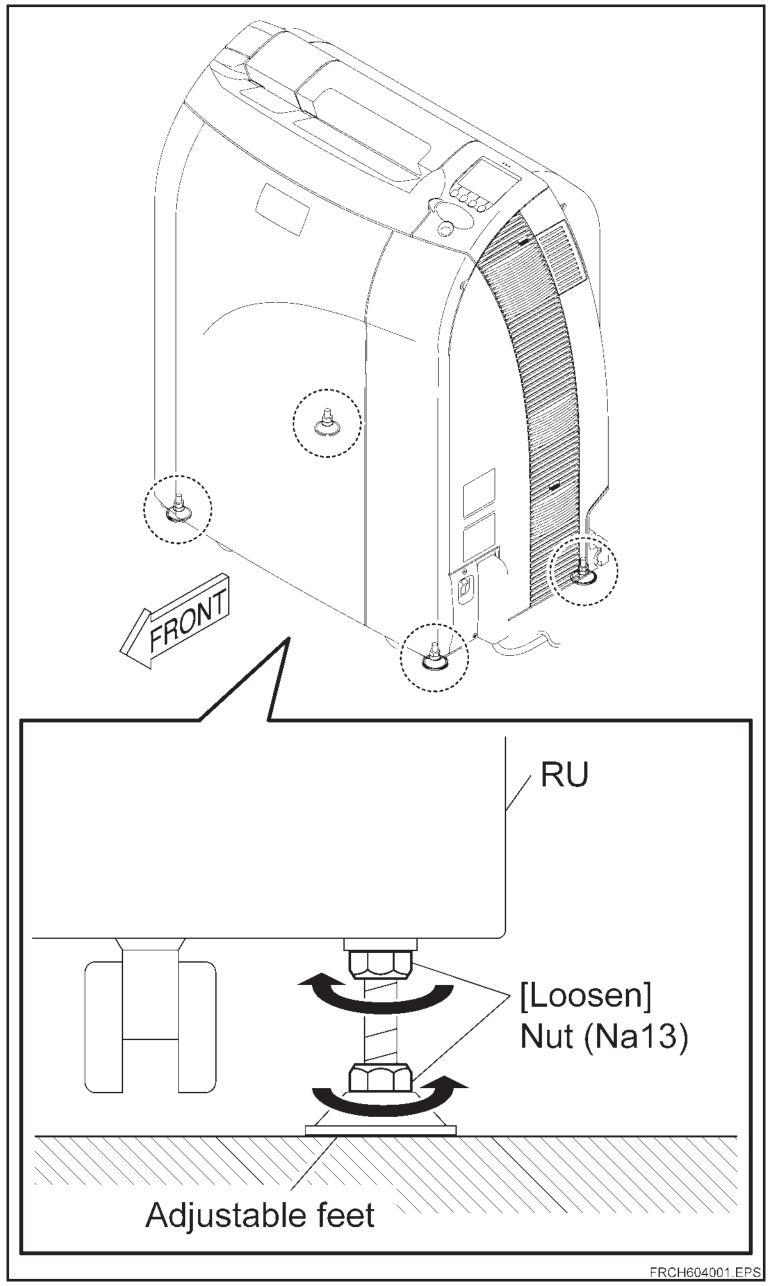

(1) Hospital name (medical institution name)
FUJI HOSPITAL
04001676 A0000 A020
(12) IP barcode No.
(2) EDR mode and menu code
(3) System ID and image No.
(13) Image processing conditions
(4) Patient ID
(5) Patient name
(10) Film mark
(7) Sex
(8) Age or date of birth
G1.0G#0.7+0.50R5Q0.5
SKULL GENERAL
L4.0S200C＊1.2＊1.0AP
0000000001 Hanako Fuji
Date of exposure 1992. 11. 27 [17:43]
R - > L
[F] 23
SCALE: 50% RT-04
G1.0G#0.7+0.50R5Q1.0
(14) Exposure menu
(15) Standardization conditions and correction item
(16) Image reversal mark
(17) Exposure time
(6) Date of exposure
(9) Set processing information
(11) Reduction ratio
FRCH603006.EPS

4. Pulling Out the Machine

4.1 Unlocking the Retainers

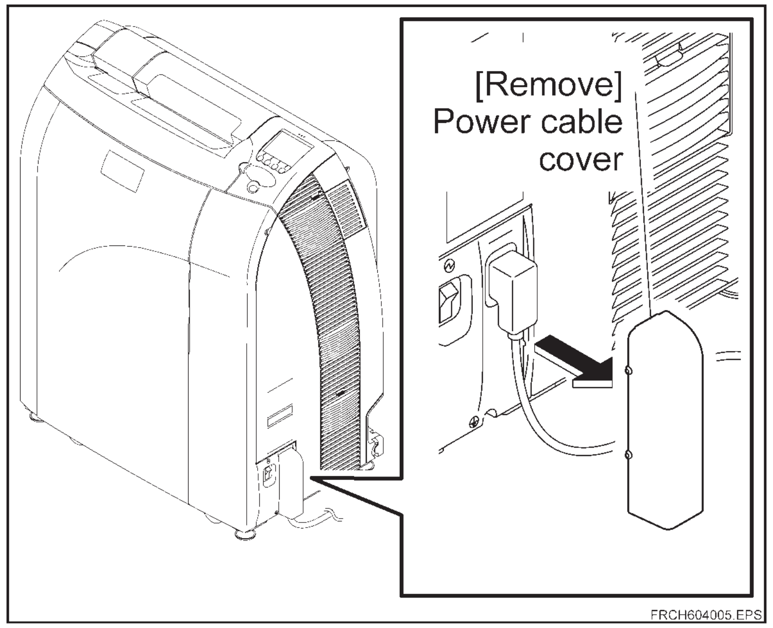
1. **Power OFF the RU.**

2. **Loosen the nuts of the adjustable feet to make the machine movable.**

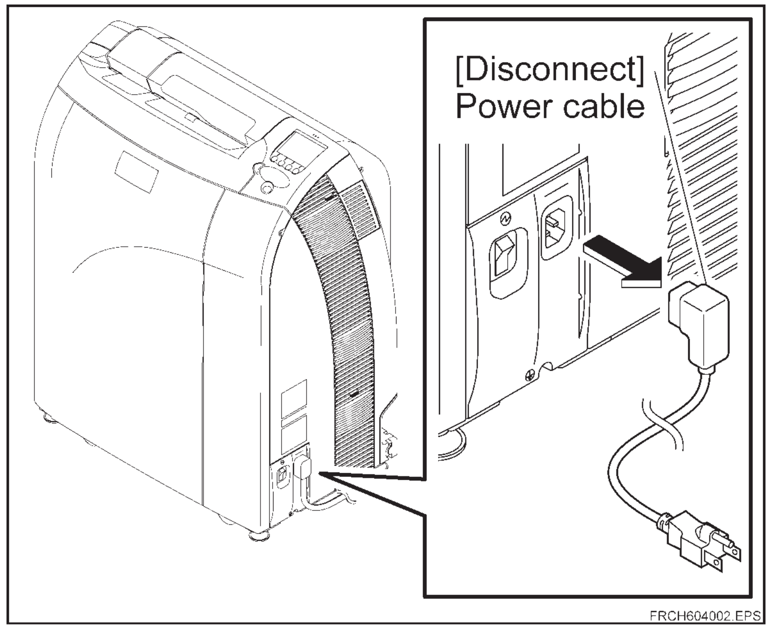

FRONT
RU
[Loosen]
Nut (Na13)
Adjustable feet
FRCH604001.EPS

4.2 Disconnecting the Cables

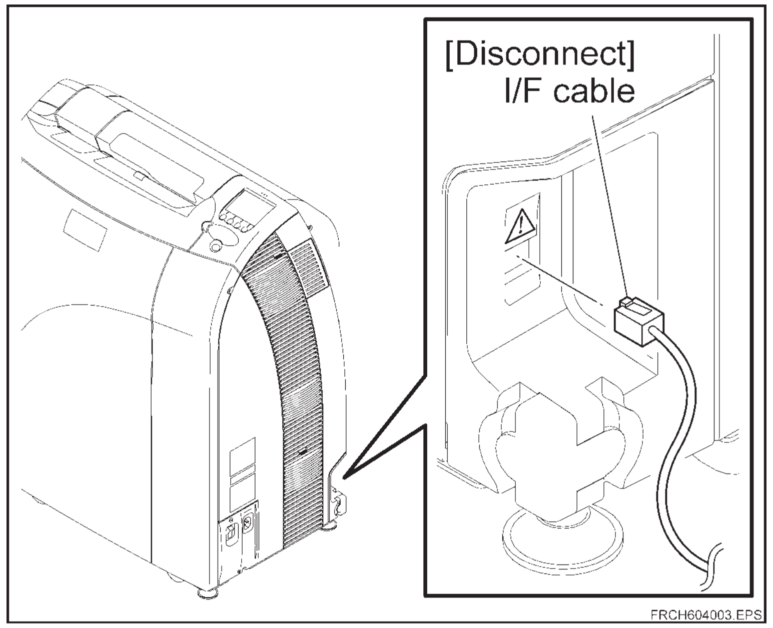
1. **Remove the power cable cover.**


[Remove]
Power cable
cover
FRCH604005.EPS

2. **Disconnect the power cable.**


[Disconnect]
Power cable
FRCH604002.EPS

3. **Disconnect the I/F cable.**

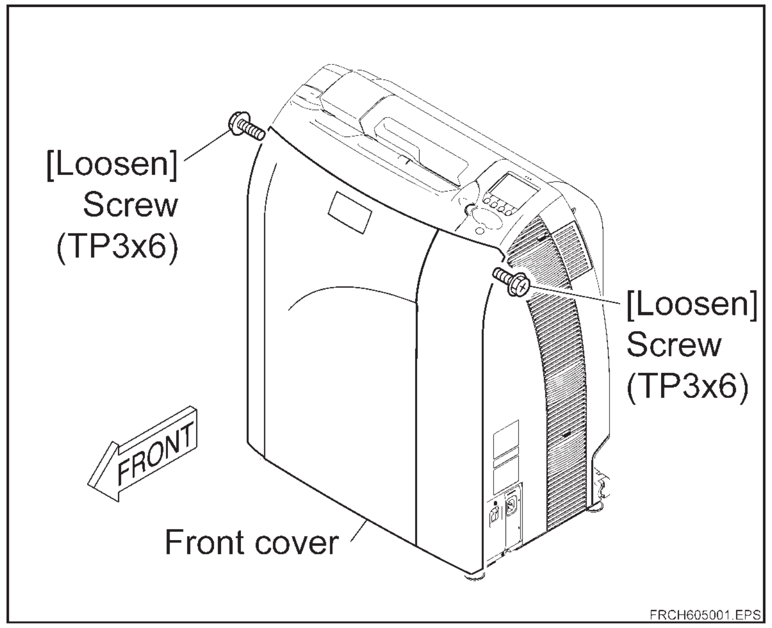

[Disconnect]
I/F cable
FRCH604003.EPS

4. **Pull out the machine to the working space.**

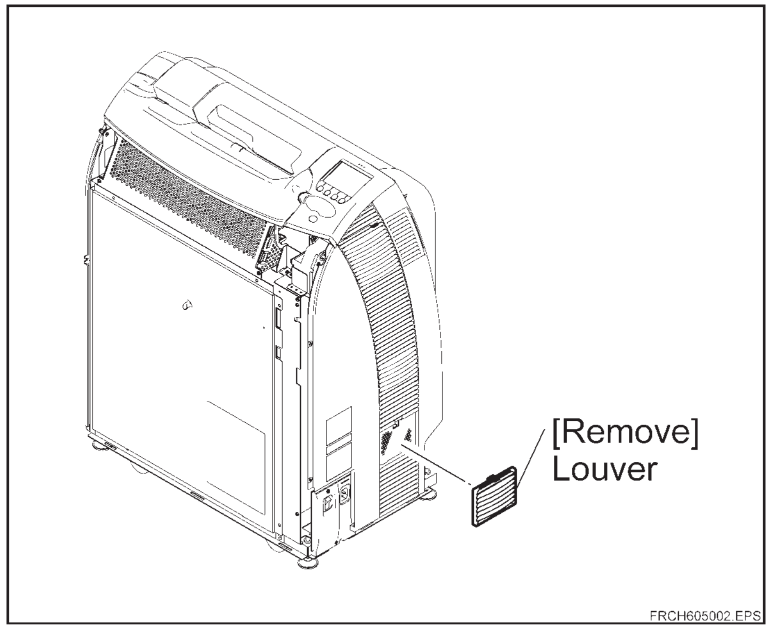
5. Removing the Covers

5.1 Removing the Covers (1st/5th Year)

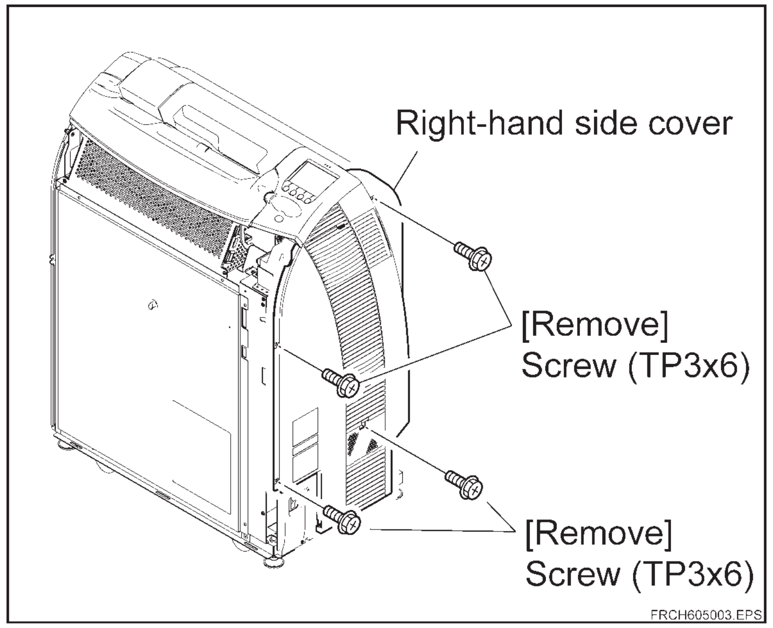
1. **Loosen the screws to remove the front cover.**


[Loosen]
Screw
(TP3x6)
[Loosen]
Screw
(TP3x6)
FRONT
Front cover
FRCH605001.EPS

2. **Remove the louver.**

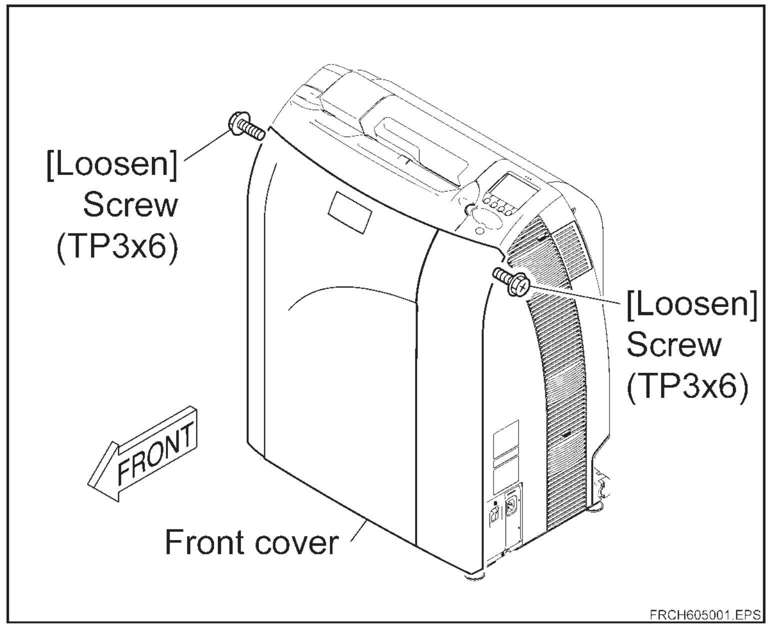

[Remove]
Louver
FRCH605002.EPS

3. **Remove the screws to remove the right-hand side cover.**

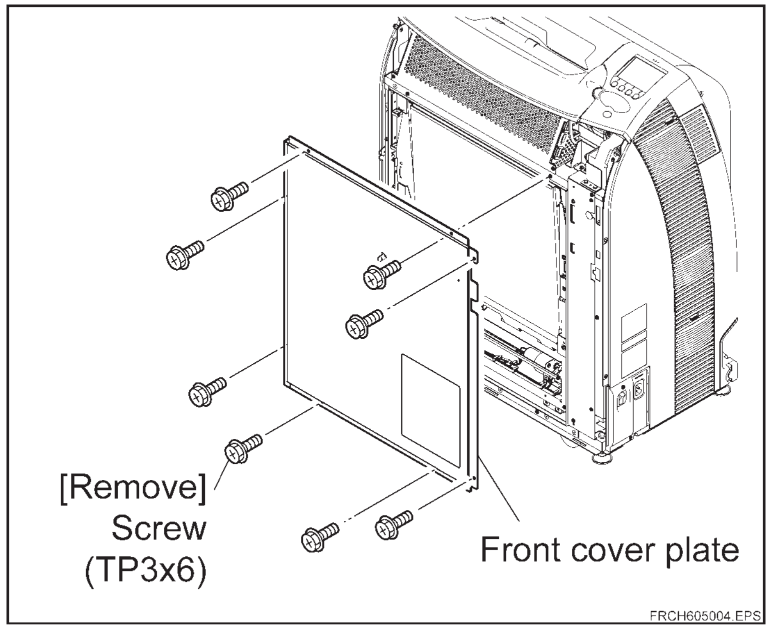

Right-hand side cover
[Remove]
Screw (TP3x6)
[Remove]
Screw (TP3x6)
FRCH605003.EPS

5.2 Removing the Covers (2nd/4th/6th Year)

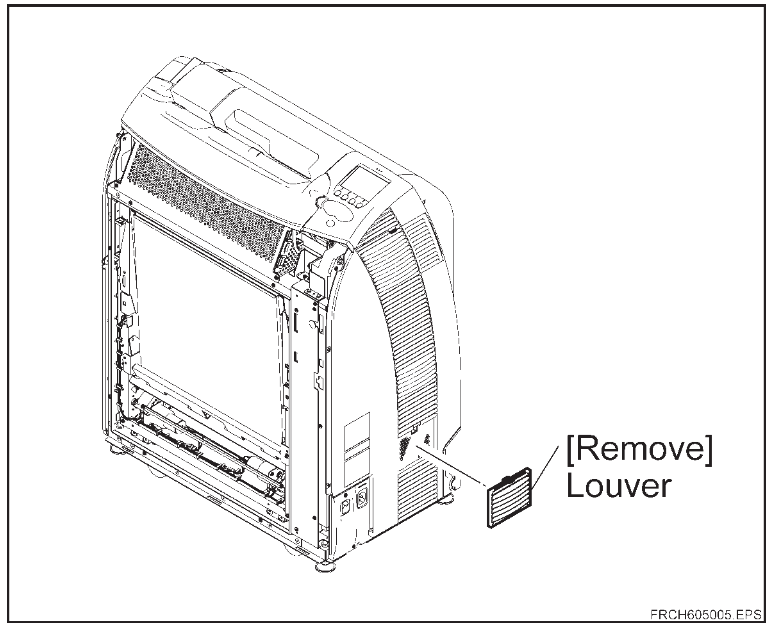
1. **Loosen the screws to remove the front cover.**


[Loosen]
Screw
(TP3x6)
[Loosen]
Screw
(TP3x6)
FRONT
Front cover
FRCH605001.EPS

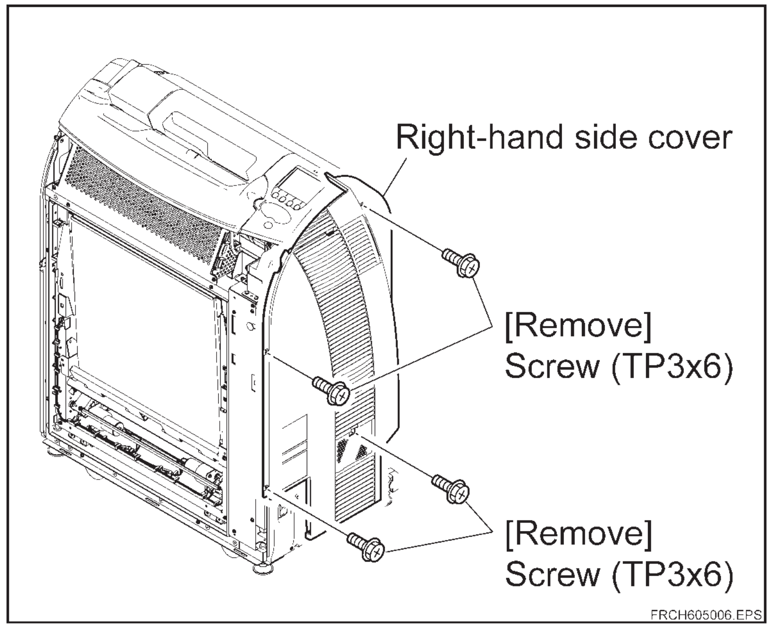
2. **Remove the screws to remove the front cover plate.**


[Remove]
Screw
(TP3x6)
Front cover plate
FRCH605004.EPS

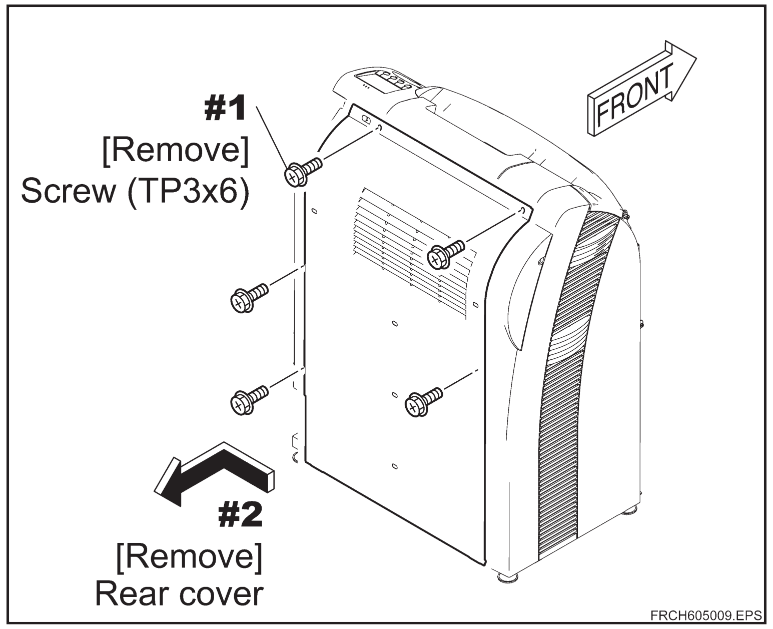
3. **Remove the louver.**


[Remove]
Louver
FRCH605005.EPS

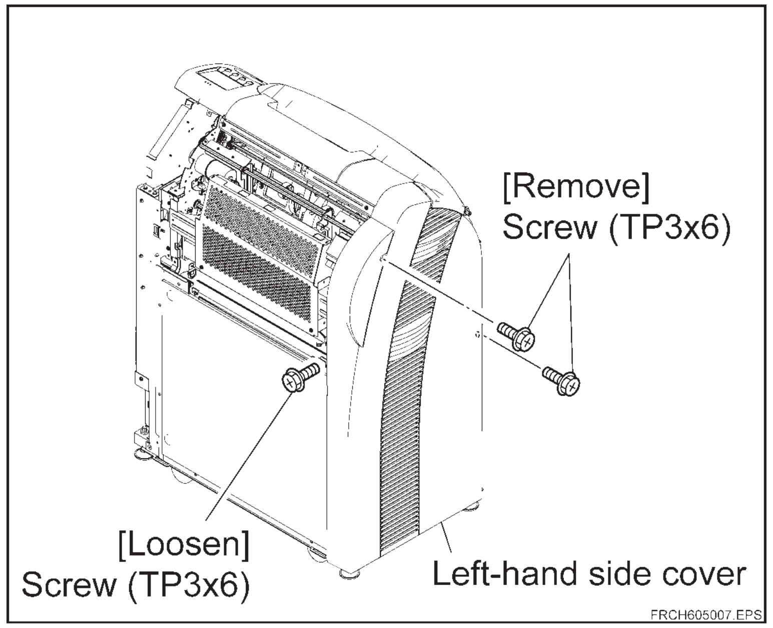
4. **Remove the screws to remove the right-hand side cover.**


Right-hand side cover
[Remove]
Screw (TP3x6)
[Remove]
Screw (TP3x6)
FRCH605006.EPS

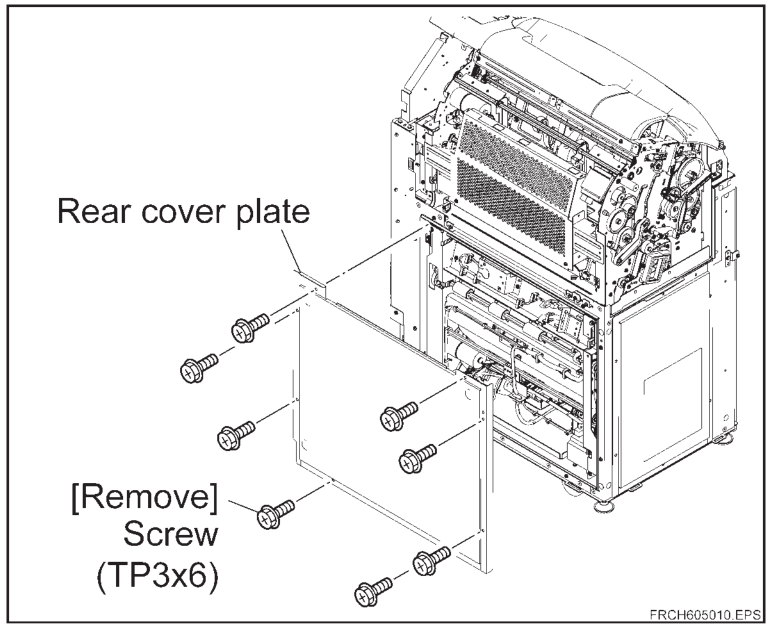
5. **Remove the screws, slightly tilt the rear cover laterally, and pull it out toward you for removal.**


#1
[Remove]
Screw (TP3x6)
FRONT
#2
[Remove]
Rear cover
FRCH605009.EPS

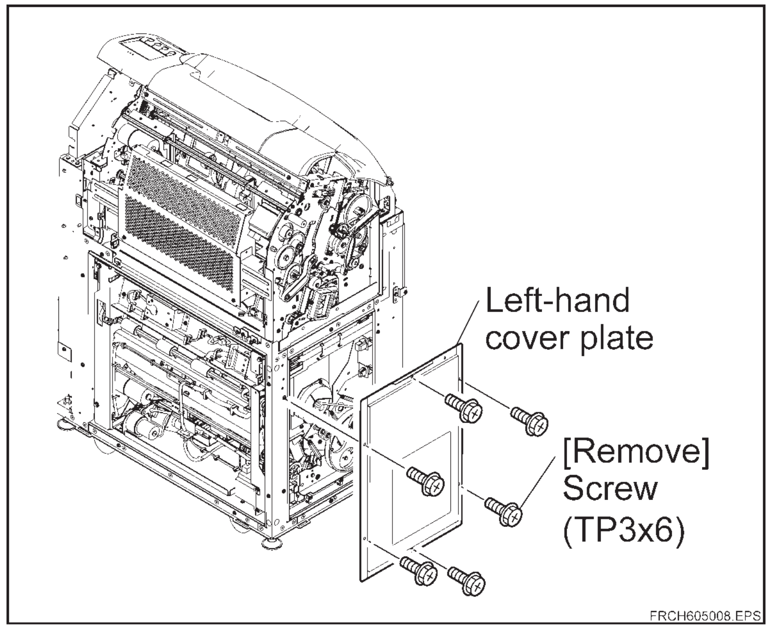
6. **Remove the screws on the left-hand side, loosen the screw on the rear, and remove the left-hand side cover.**


[Remove]
Screw (TP3x6)
[Loosen]
Screw (TP3x6)
Left-hand side cover
FRCH605007.EPS

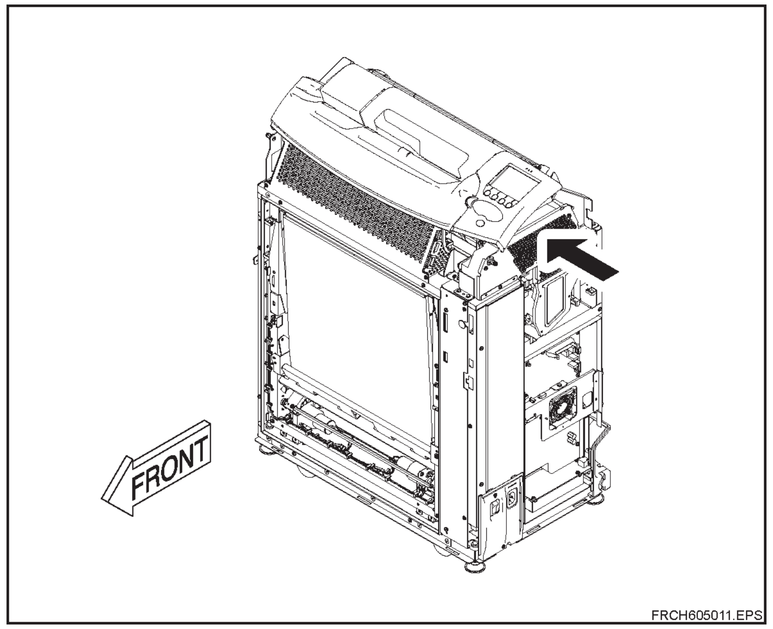
7. **Remove the screws to remove the rear cover plate.**


Rear cover plate
[Remove]
Screw
(TP3x6)
FRCH605010.EPS

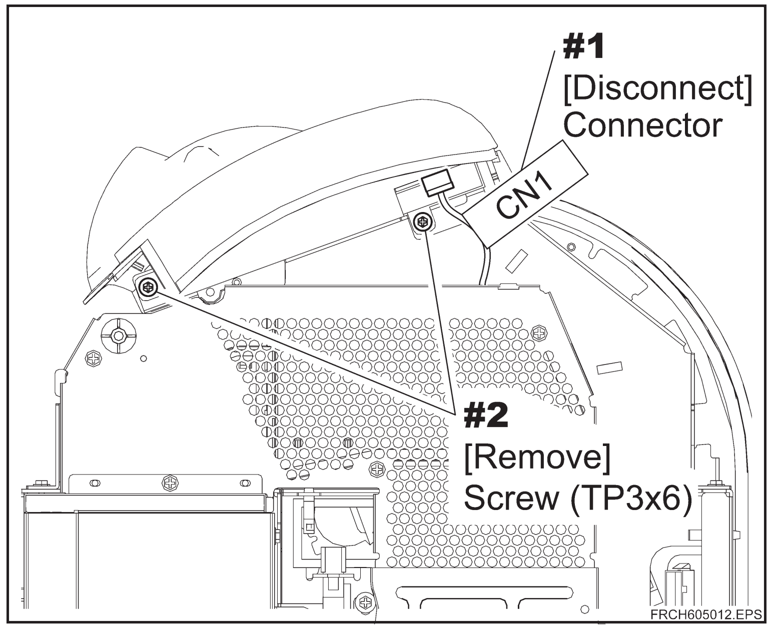
8. **Remove the screws to remove the left-hand cover plate.**


Left-hand
cover plate
[Remove]
Screw
(TP3x6)
FRCH605008.EPS

9. **Take the procedure 10 from the direction indicated by the arrow in the figure.**


FRONT
FRCH605011.EPS

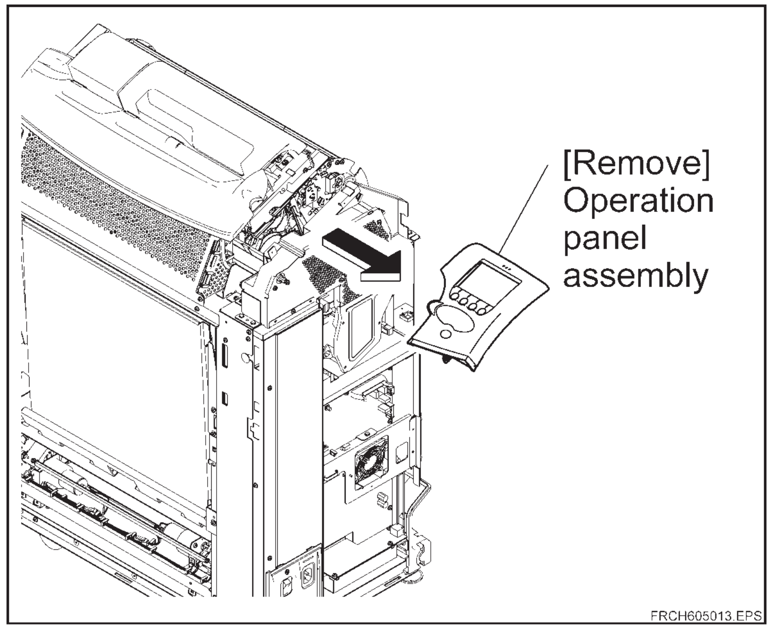
10. **Disconnect the connector, and remove the retaining screws of the operation panel assembly.**


#1
[Disconnect]
Connector
CN1
#2
[Remove]
Screw (TP3x6)
FRCH605012.EPS

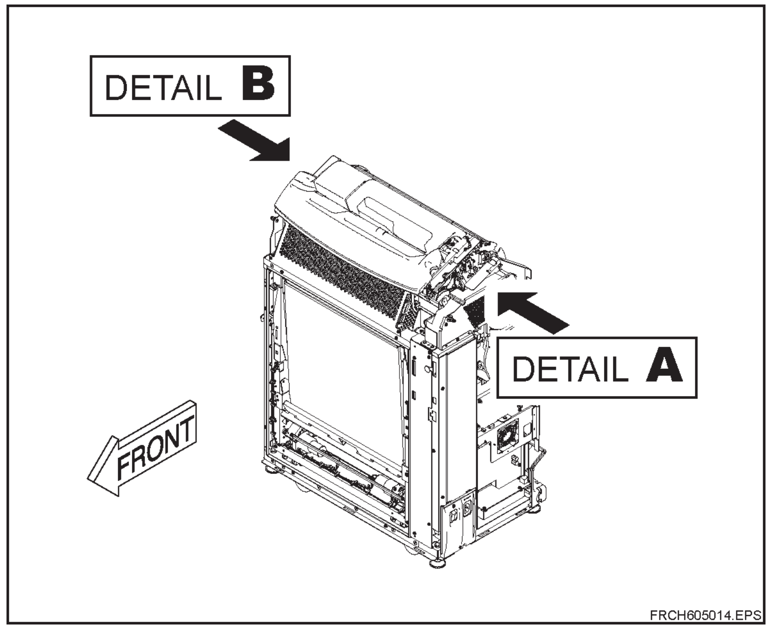
11. **Remove the operation panel assembly.**

◆ **NOTE** ◆

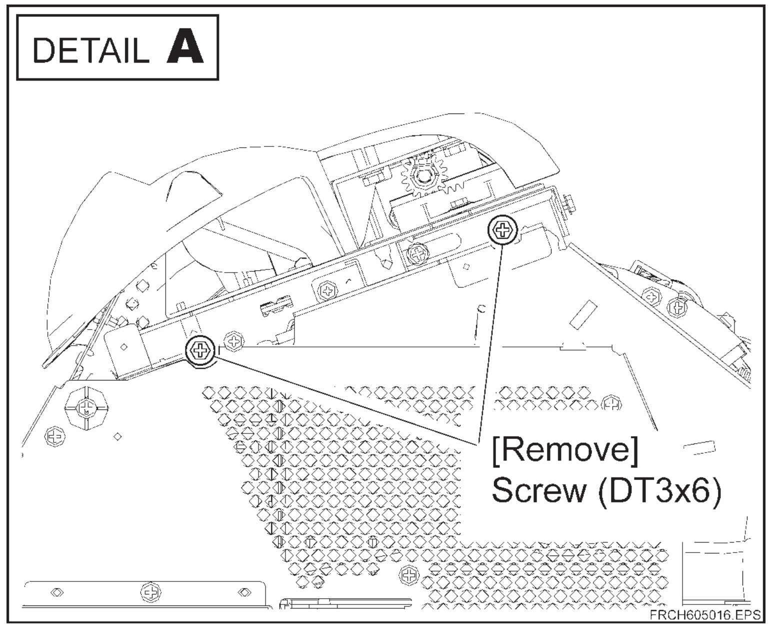
Do not remove the operation panel assembly in the upward direction. Otherwise, part of the machine might get damaged.


[Remove]
Operation
panel
assembly
FRCH605013.EPS

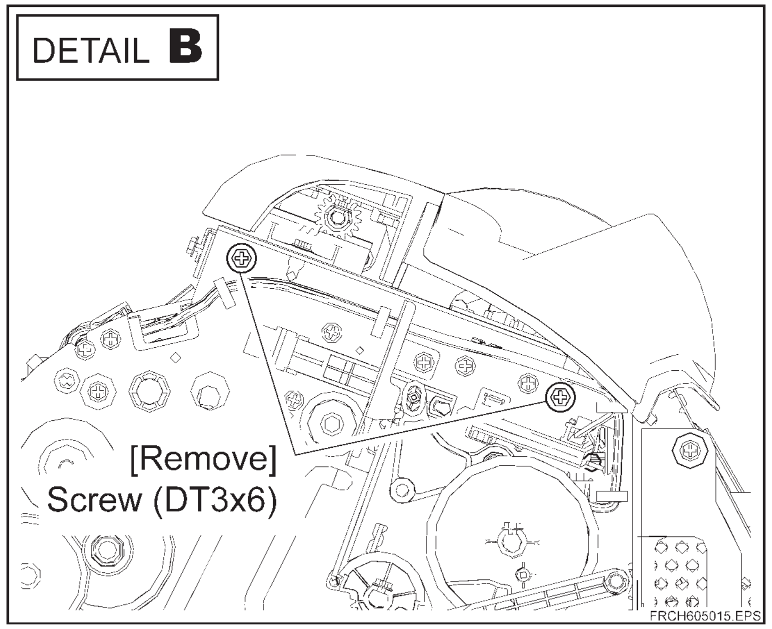
12. **Take the procedures 13 and 14 from the direction indicated by the arrow in the figure.**


DETAIL B
DETAIL A
FRONT
FRCH605014.EPS

13. **Remove the retaining screws of the dust-tight cover assembly from the direction instructed in DETAIL A.**


DETAIL A
[Remove]
Screw (DT3x6)
FRCH605016.EPS

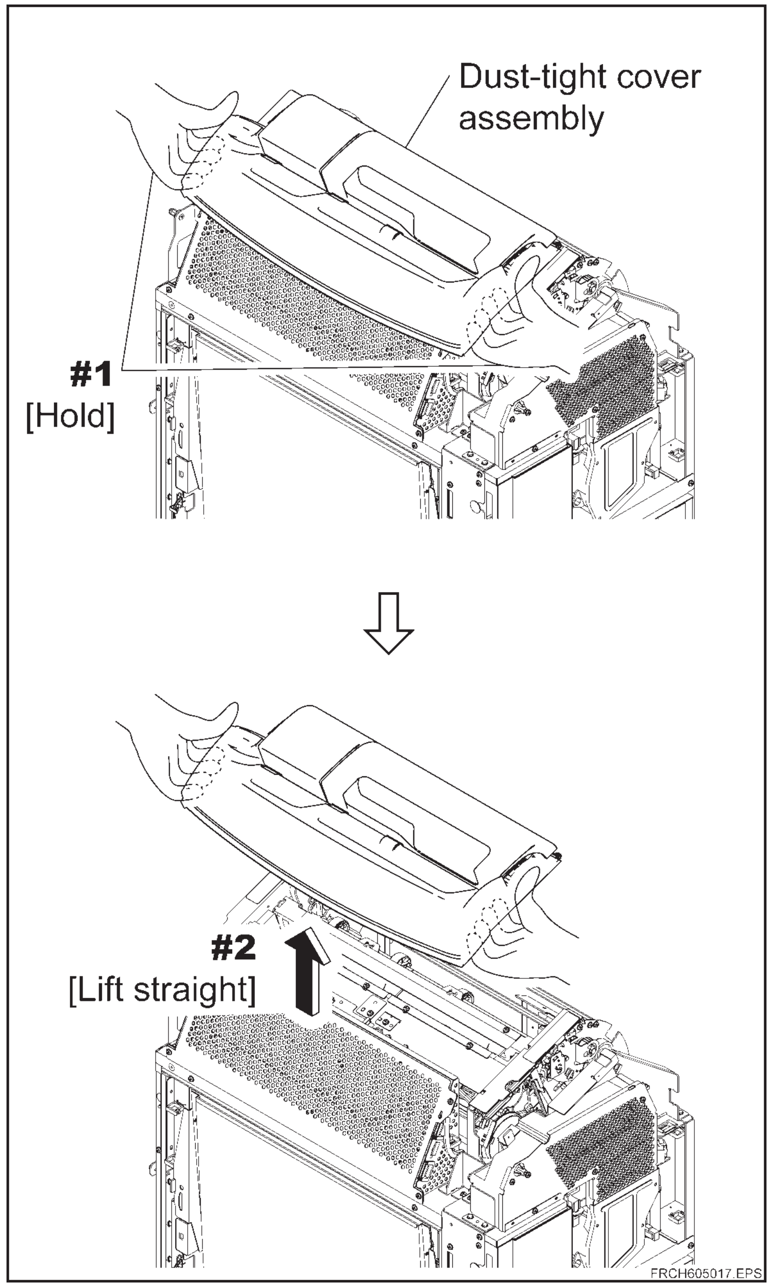
14. **Remove the retaining screws of the dust-tight cover assembly from the direction instructed in DETAIL B.**


DETAIL B
[Remove]
Screw (DT3x6)
FRCH605015.EPS

15. **Hold the dust-tight cover assembly on the position indicated in the figure, and lift it straight up to remove, while exercising care not to tilt the assembly.**

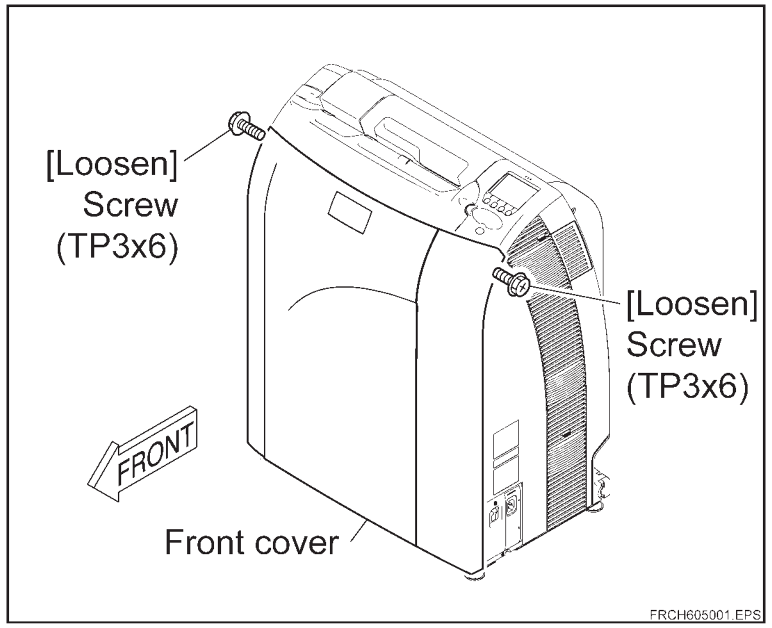
◆ **NOTE** ◆

Be sure to lift the dust-tight cover assembly straight without tilting it, to remove it. Otherwise, the sensor or the gear might get damaged.

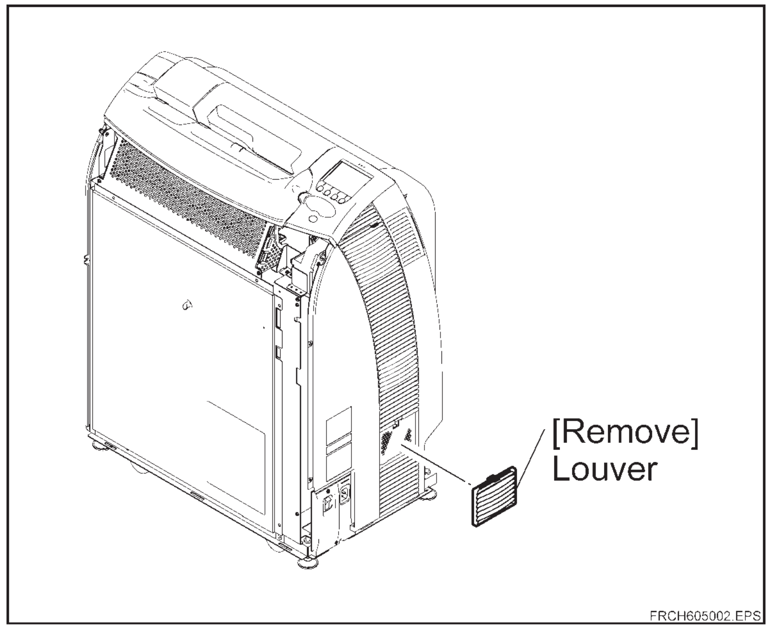

Dust-tight cover assembly
#1
[Hold]
#2
[Lift straight]
FRCH605017.EPS

5.3 Removing the Covers (3rd Year)

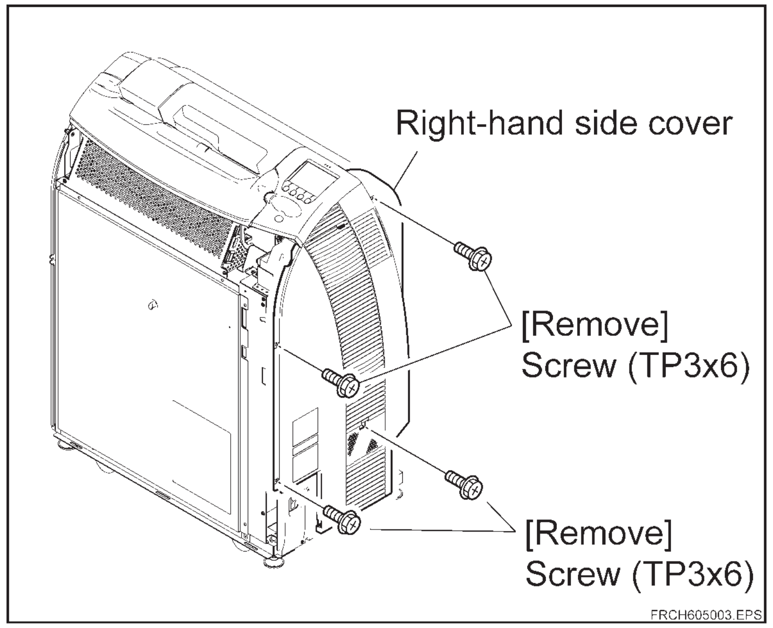
1. **Loosen the screws to remove the front cover.**


[Loosen]
Screw
(TP3x6)
[Loosen]
Screw
(TP3x6)
FRONT
Front cover
FRCH605001.EPS

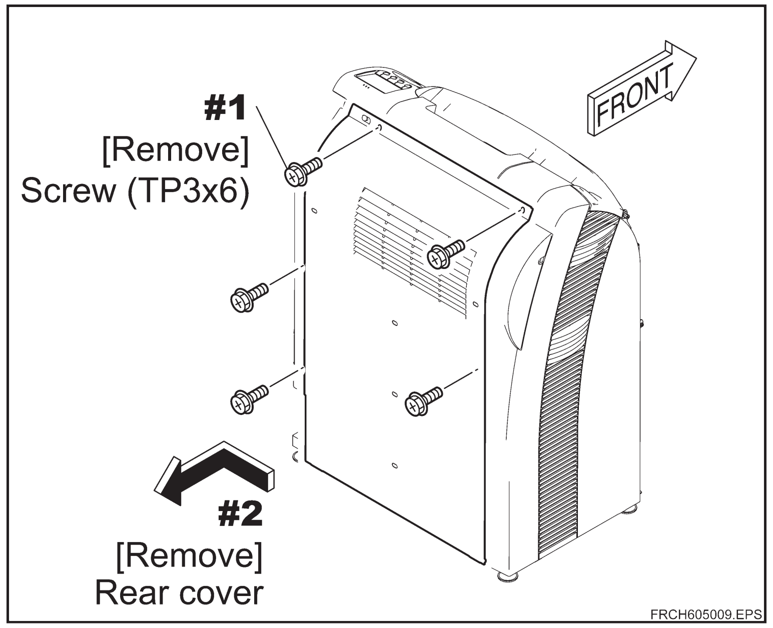
2. **Remove the louver.**


[Remove]
Louver
FRCH605002.EPS

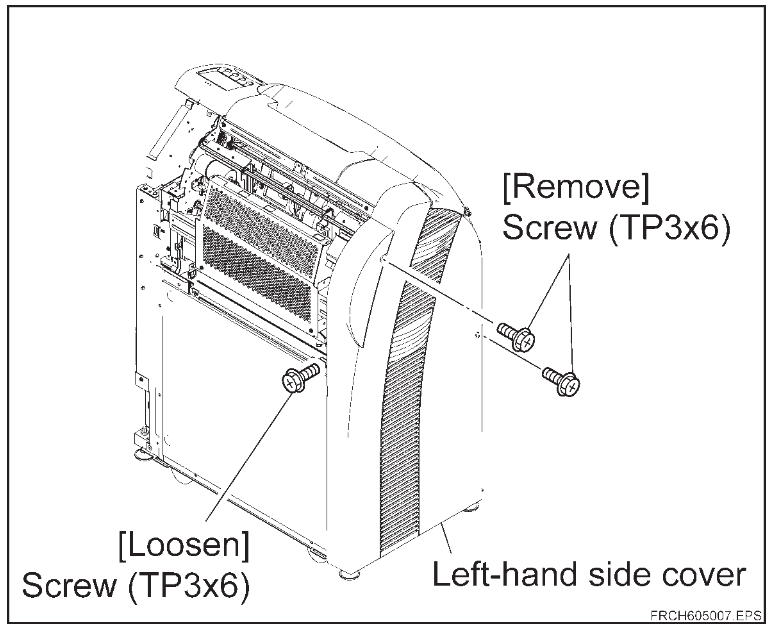
3. **Remove the screws to remove the right-hand side cover.**


Right-hand side cover
[Remove]
Screw (TP3x6)
[Remove]
Screw (TP3x6)
FRCH605003.EPS

4. **Remove the screws, slightly tilt the rear cover laterally, and pull it out toward you for removal.**

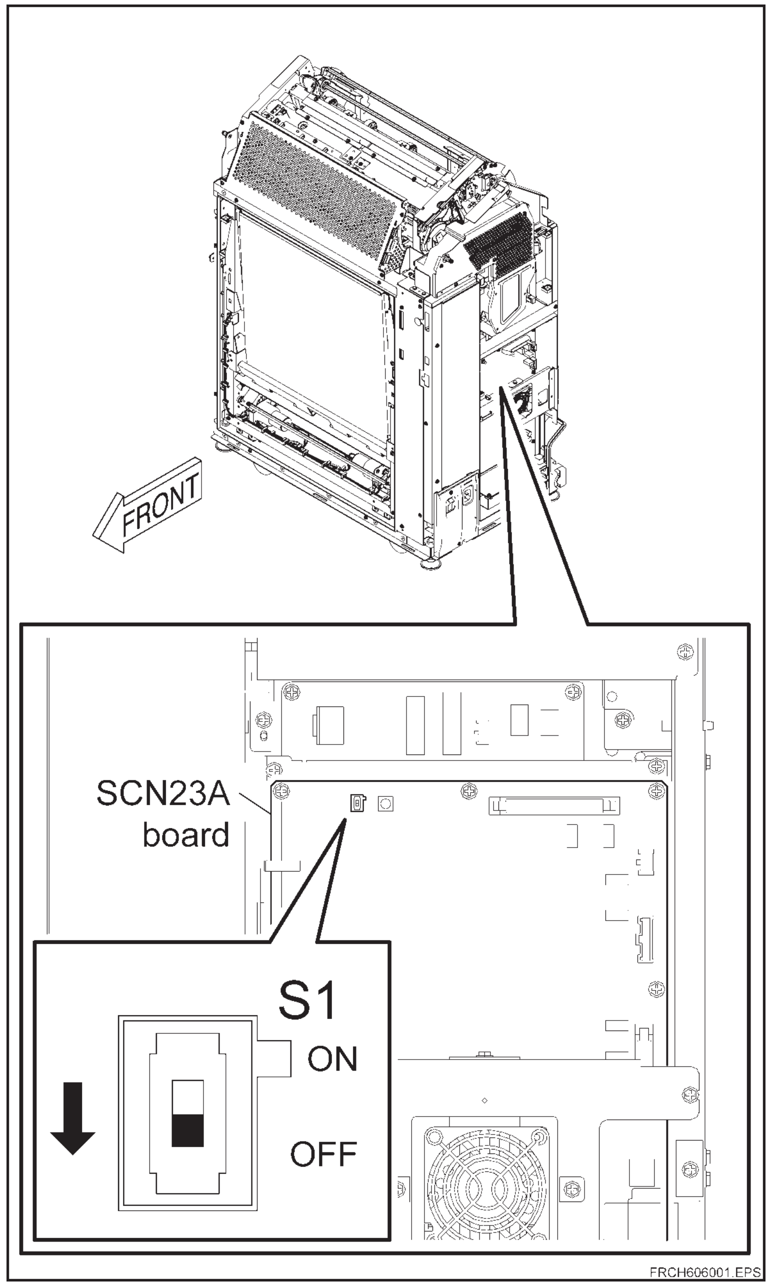

#1
[Remove]
Screw (TP3x6)
FRONT
#2
[Remove]
Rear cover
FRCH605009.EPS

5. **Remove the screws on the left-hand side, loosen the screw on the rear, and remove the left-hand side cover.**


[Remove]
Screw (TP3x6)
[Loosen]
Screw (TP3x6)
Left-hand side cover
FRCH605007.EPS

6. Turning OFF the High-Voltage Switch

1. **Turn OFF the high-voltage switch (S1) on the SCN23A board.**


FRONT
SCN23A board
S1
ON
OFF
FRCH606001.EPS

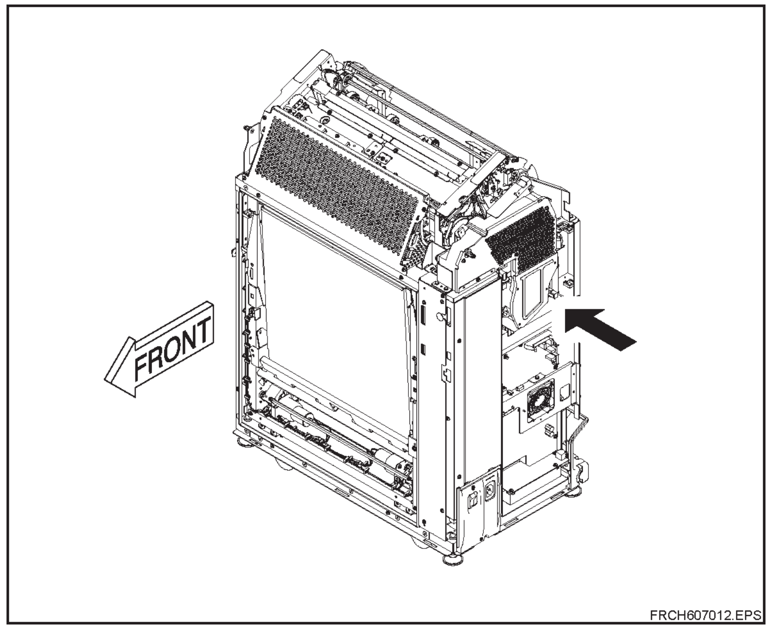
7. Cassette Set Unit

7.1 Removing the Erasure Unit

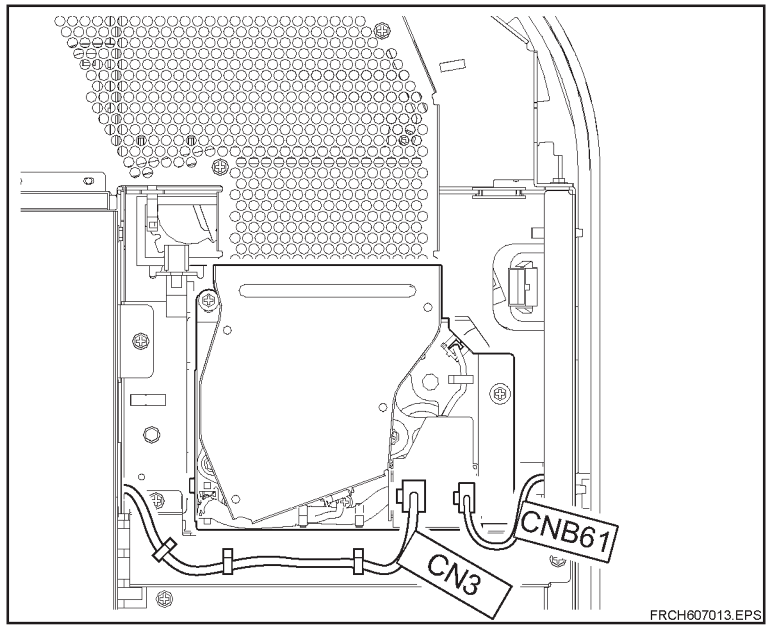
◆ NOTE ◆

When removing the erasure unit, exercise care in handling as the unit is hot.

1. Take the procedures from 2 to 5 from the direction indicated by the arrow in the figure.


FRONT
FRCH607012.EPS

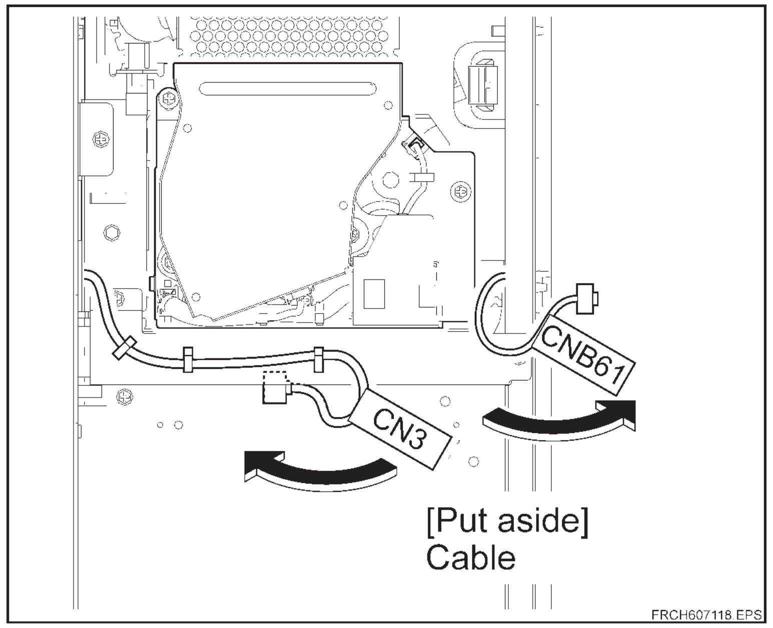
2. Disconnect the connectors.


CNB61
CN3
FRCH607013.EPS

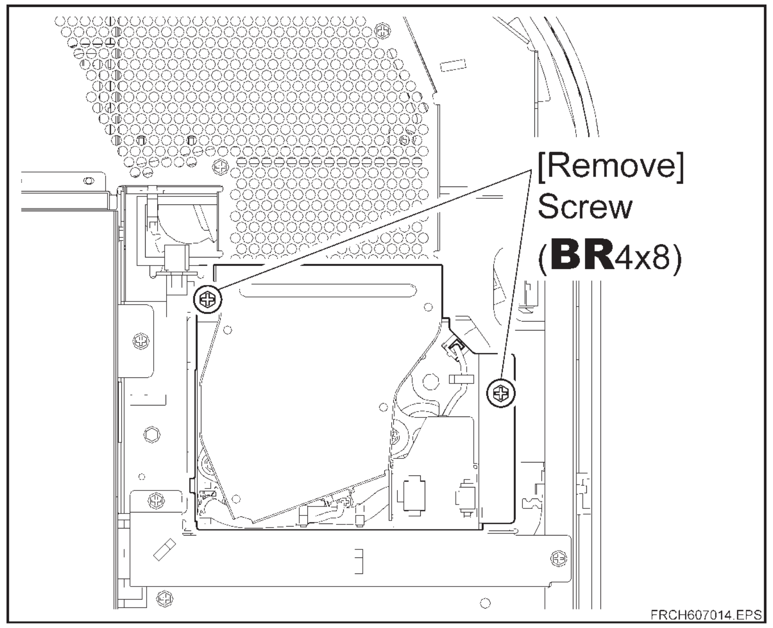
3. Put the cable aside for the protection of the cable.

◆ NOTE ◆

Be sure to put the cable aside. Otherwise, the cable and the connector might get caught when removing/reinstalling the erasure unit.


CNB61
CN3
[Put aside]
Cable
FRCH607118.EPS

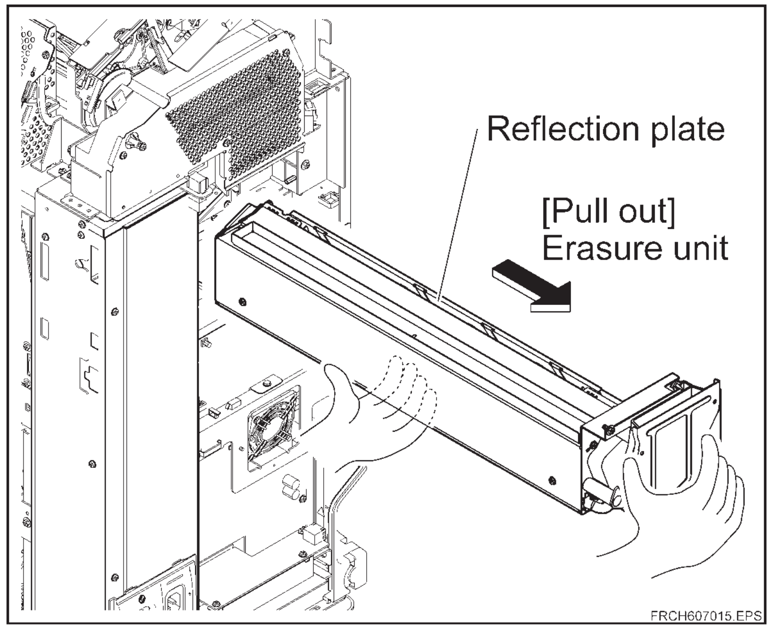
4. Remove the retaining screws of the erasure unit.


[Remove]
Screw
(**BR**4x8)
FRCH607014.EPS

5. Holding the erasure unit on the position indicated in the figure, pull it out.

◆ NOTE ◆

When removing the erasure unit, exercise care in handling as the unit is hot.

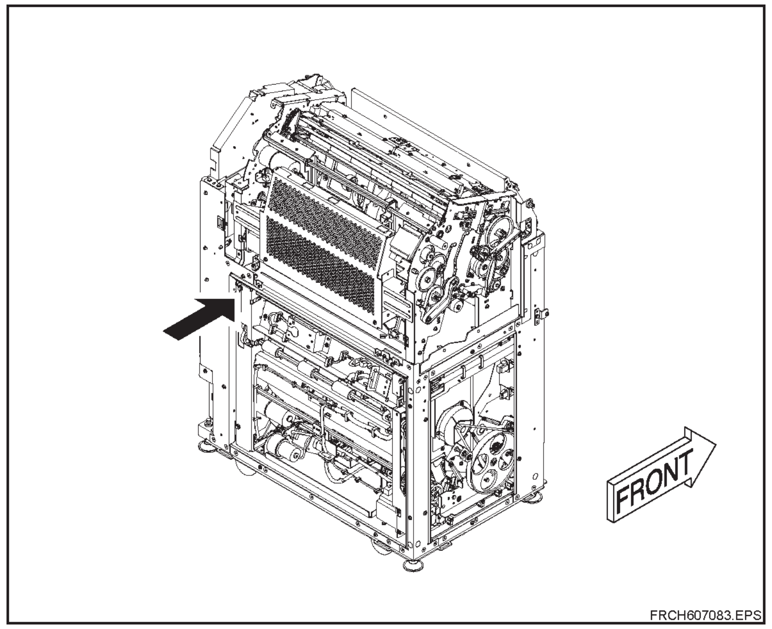

Reflection plate
[Pull out]
Erasure unit
FRCH607015.EPS

7.2 Removing the Cassette Set Unit

◆ NOTE ◆

Since the cassette set unit is a heavy object, be careful about the following points when removing, reinstalling and moving.
- Secure a sufficient working space before the operation.
- Hold the position where the “Hold here” label is applied.
- Lift the unit in a natural posture.

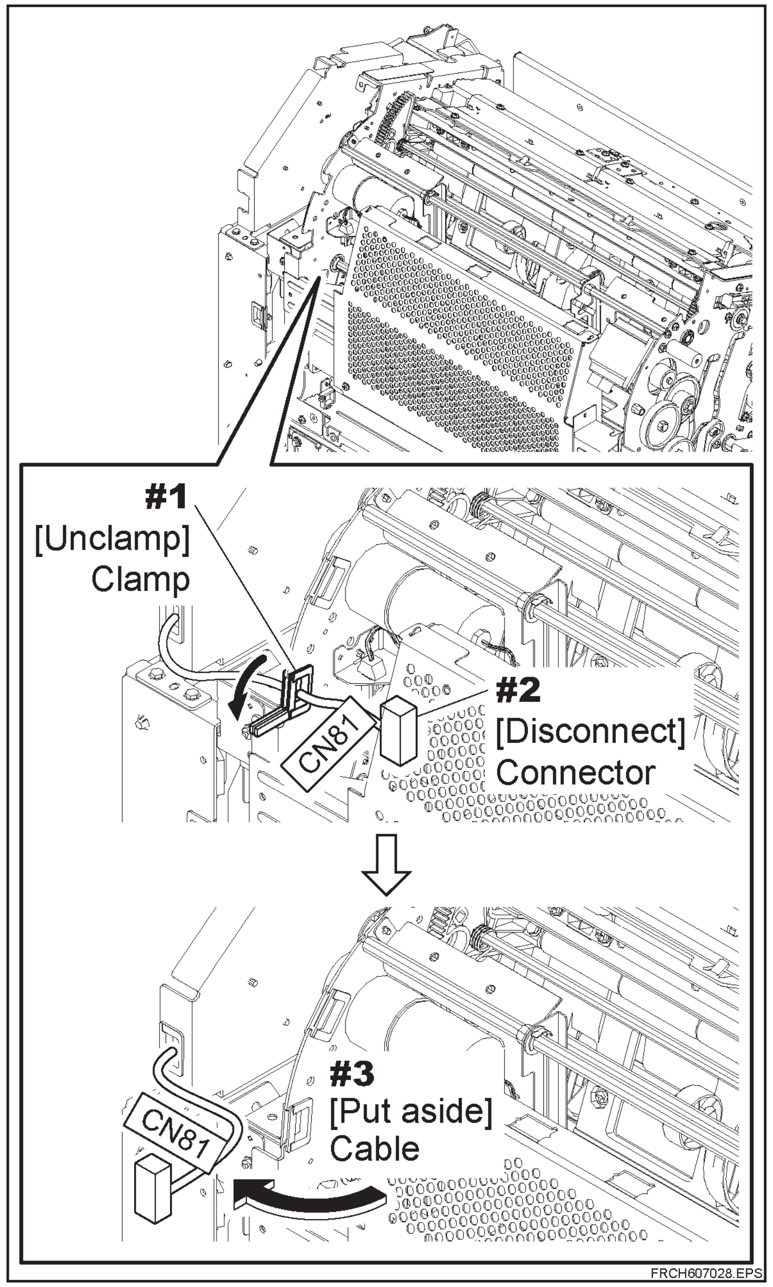
1. **Take the procedures from 2 to 4 from the direction indicated by the arrow in the figure.**


FRONT
FRCH607083.EPS

2. **Unclamp the clamp, and disconnect the connector.**
Put the cable aside out of the housing for the protection of the cable.

◆ NOTE ◆

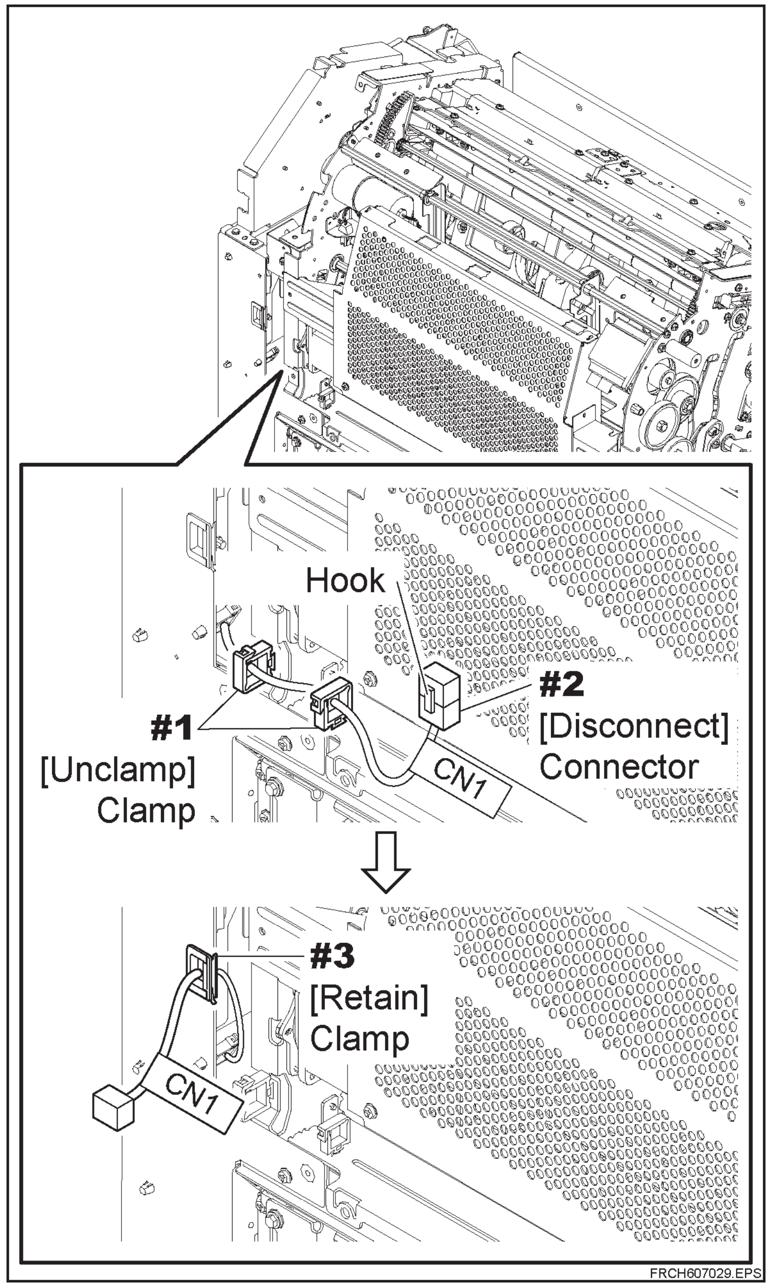
Be sure to put the cable aside out of the housing. Otherwise, the cable and the connector might get caught when removing/reinstalling the cassette set unit.


#1
[Unclamp]
Clamp
CN81
#2
[Disconnect]
Connector
CN81
#3
[Put aside]
Cable
FRCH607028.EPS

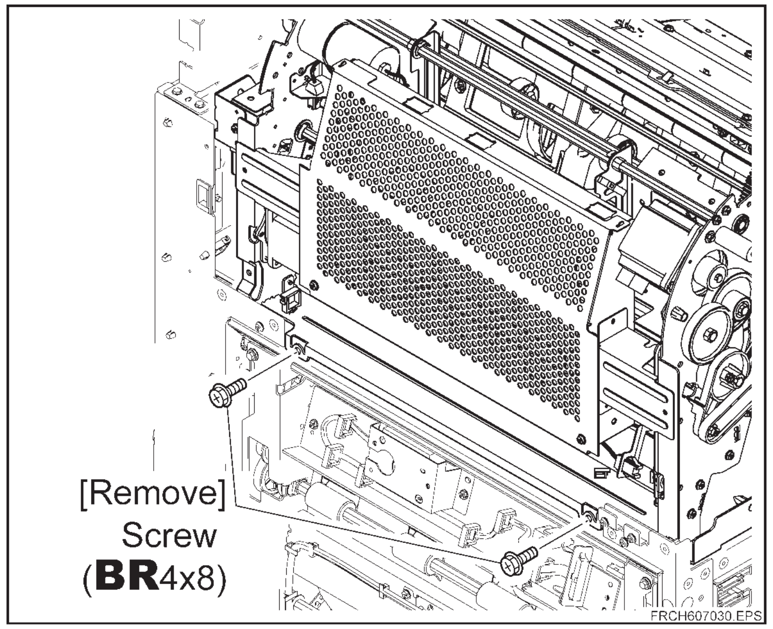
3. **Unclamp the clamp, and disconnect the connector while pushing the hook of the connector. Retain the cable with the clamp for the protection of the cable.**

◆ *NOTES* ◆

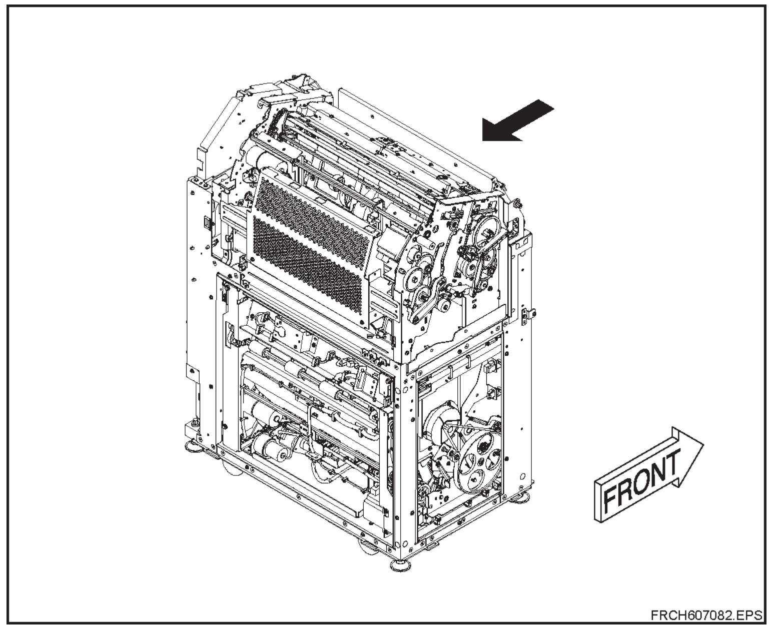
- *As the working space is small, exercise care not to get injured by peripheral components when disconnecting the connector.*
- *Be sure to retain the cable with the clamp. Otherwise, the cable and the connector might get caught when removing/ reinstalling the cassette set unit.*


Hook
#1
[Unclamp]
Clamp
#2
[Disconnect]
Connector
CN1
#3
[Retain]
Clamp
CN1
FRCH607029.EPS

4. **Remove the retaining screws of the cassette set unit.**


[Remove]
Screw
(BR4x8)
FRCH607030.EPS

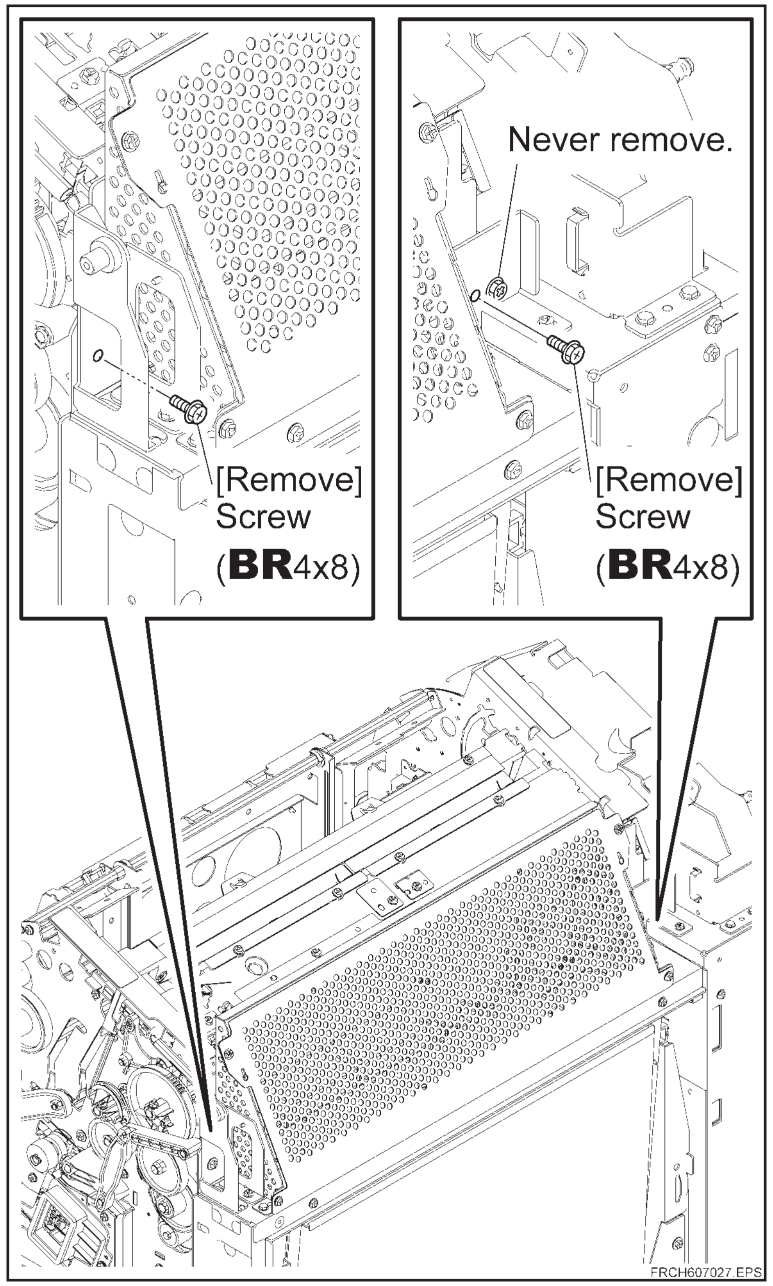
5. **Take the procedure 6 from the direction indicated by the arrow in the figure.**


FRONT
FRCH607082.EPS

6. **Remove the retaining screws of the cassette set unit.**

⚠ *CAUTION*

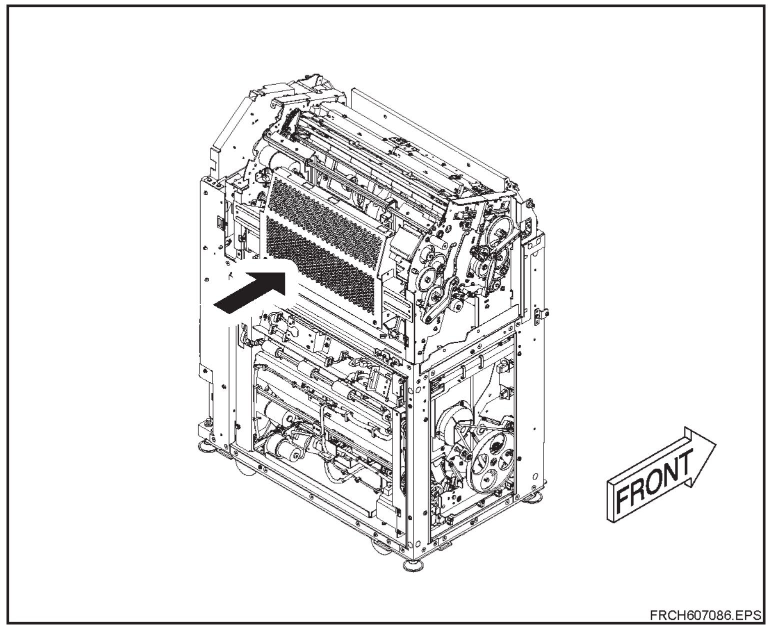
Never remove red painted screws.


[Remove]
Screw
(BR4x8)
Never remove.
[Remove]
Screw
(BR4x8)
FRCH607027.EPS

7. **Take the procedure 8 from the direction indicated by the arrow in the figure.**

◆ NOTE ◆

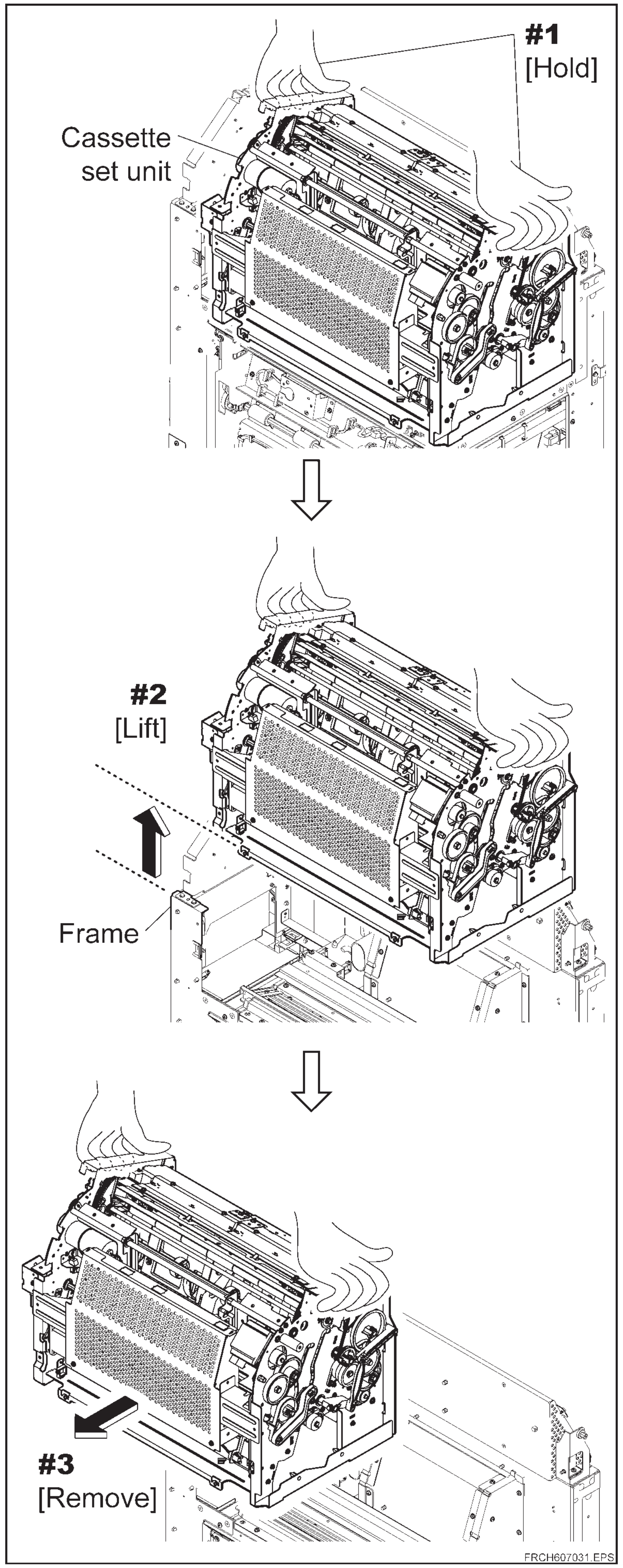
The heavy object is to be handled in the following procedure. Be sure to work from the direction as instructed.


FRONT
FRCH607086.EPS

8. **Hold the cassette set unit on the positions indicated in the figure. Lift the cassette set unit above the housing frame and remove it.**

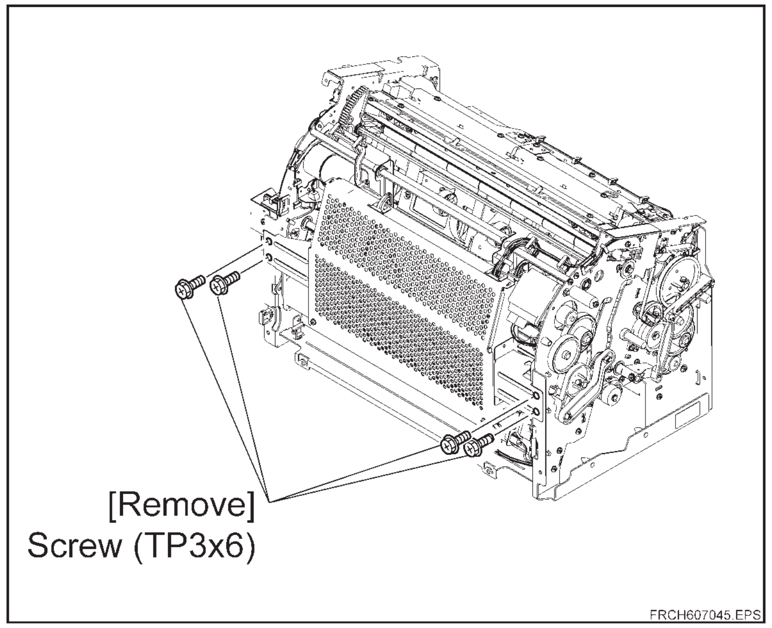
◆ NOTES ◆

- *Since the cassette set unit is a heavy object, be sure to secure a sufficient working space before the operation, and work in a natural posture.*
- *Be sure to lift the cassette set unit above the housing frame before removing. If the cassette set unit has not been lifted high enough, the unit might come into contact with the housing, causing the damage.*


#1
[Hold]
Cassette set unit
#2
[Lift]
Frame
#3
[Remove]
FRCH607031.EPS

7.3 Preparation for Cleaning of Suction Cups

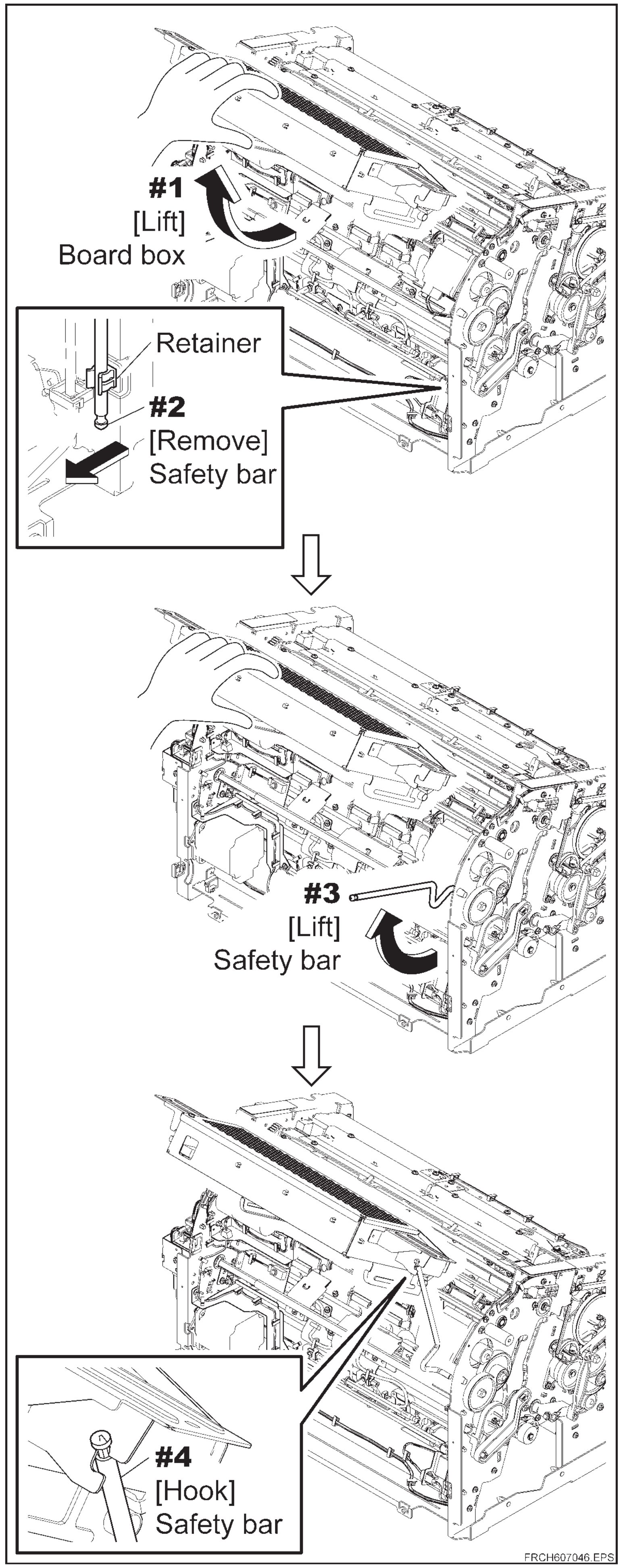
1. **Remove the screws.**


[Remove]
Screw (TP3x6)
FRCH607045.EPS

2. **Lift the board box and remove the safety bar from the retainer by means of a screwdriver or the like. Lift the safety bar and hook it on the bracket of the board box.**

◆ **NOTE** ◆

Be sure to hook the safety bar on the bracket of the board box to prevent the board box from falling down. Otherwise, the board box might fall down, hurting the operator.


#1
[Lift]
Board box
Retainer
#2
[Remove]
Safety bar
#3
[Lift]
Safety bar
#4
[Hook]
Safety bar
FRCH607046.EPS

3. **Manually rotate the gear of the motor, and check to make sure that the debris fall prevention shutter assembly has moved to its closed position.**

⚠ **CAUTION**

Do not work with your head put under the board box. The safety bar supporting the board box might come off, causing you to get injured.

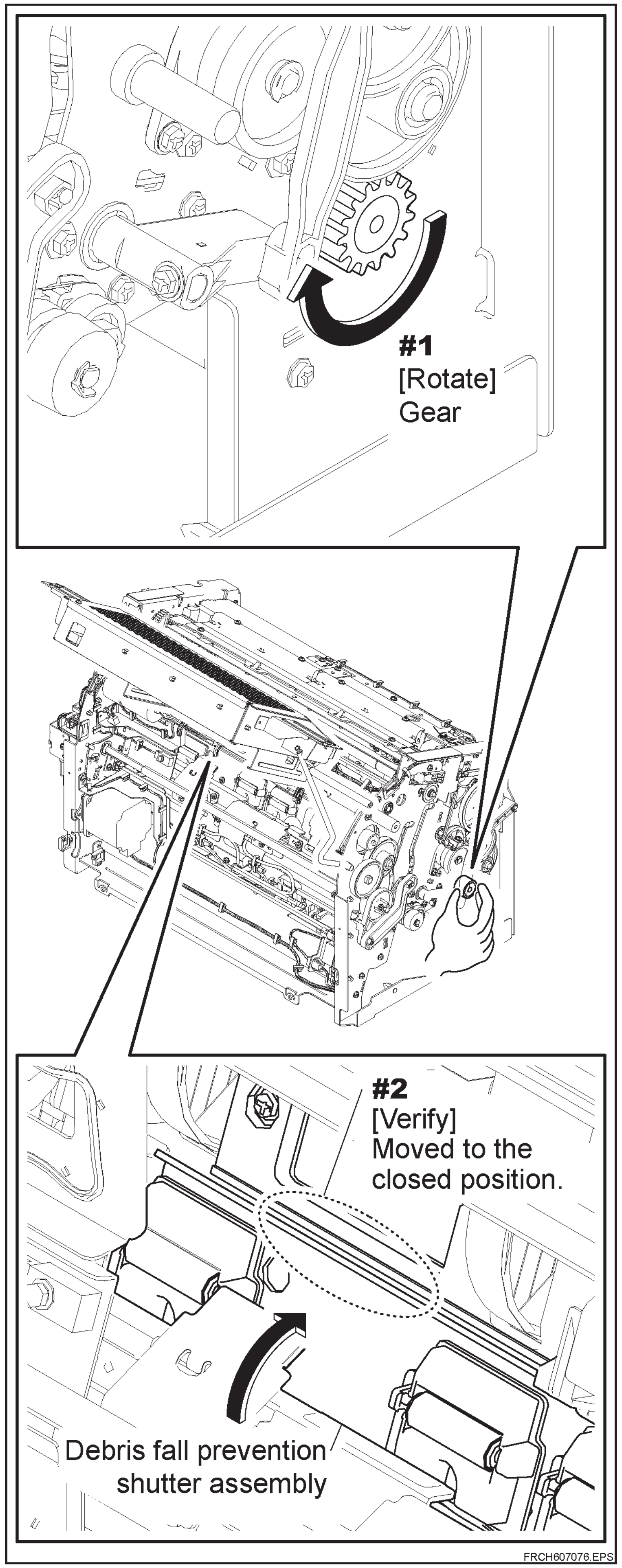
◆ *NOTE* ◆

Check to make sure that the debris fall prevention shutter assembly has moved to its closed position. Otherwise, the tip of the IP removal arm comes into contact, preventing the arm from moving.

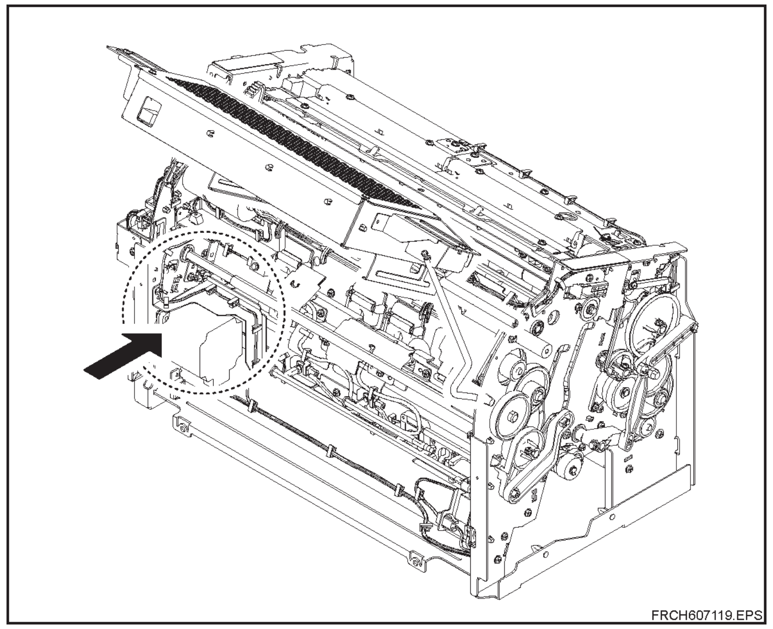
◇ *REFERENCE* ◇

For the details on the operation of the debris fall prevention shutter assembly, refer to the Machine Description “5.2 Cassette Set Unit”.

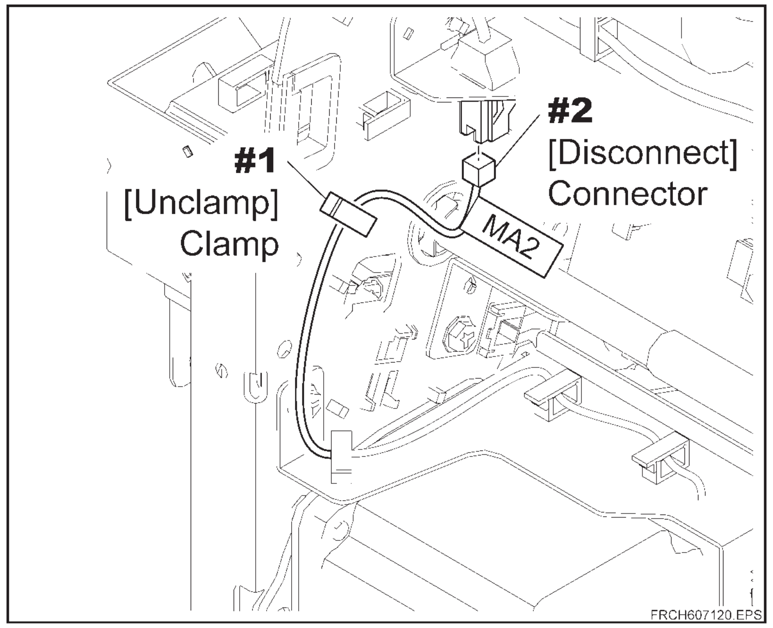
☞ ***{MD:5.2_Cassette Set Unit}***


#1
[Rotate]
Gear
#2
[Verify]
Moved to the closed position.
Debris fall prevention shutter assembly
FRCH607076.EPS

4. **Take the procedures from 5 to 9 from the direction indicated by the arrow in the figure.**


FRCH607119.EPS

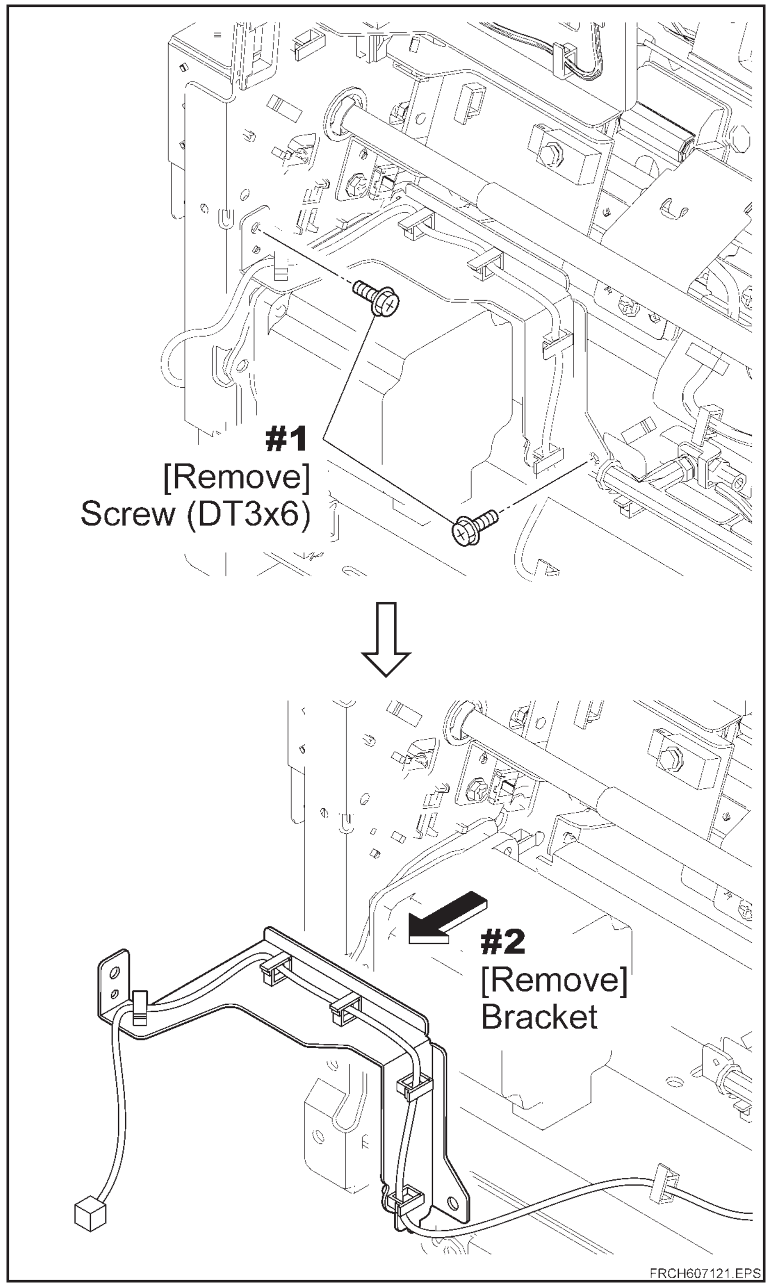
5. **Unclamp the clamp, and disconnect the connector.**


#1
[Unclamp]
Clamp
#2
[Disconnect]
Connector
MA2
FRCH607120.EPS

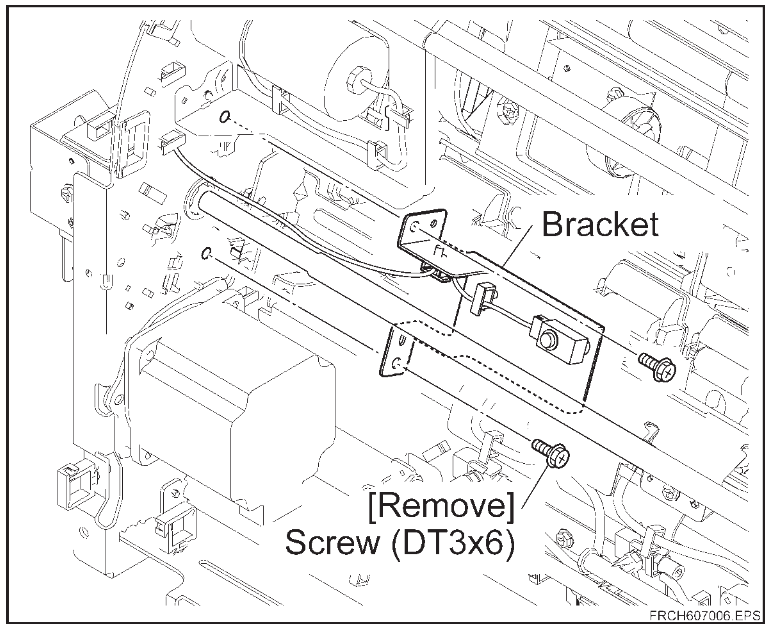
6. **Remove the screws to remove the bracket.**

◆ NOTE ◆

The removed bracket has the cable left attached. Exercise care not to damage the cable.


#1
[Remove]
Screw (DT3x6)
#2
[Remove]
Bracket
FRCH607121.EPS

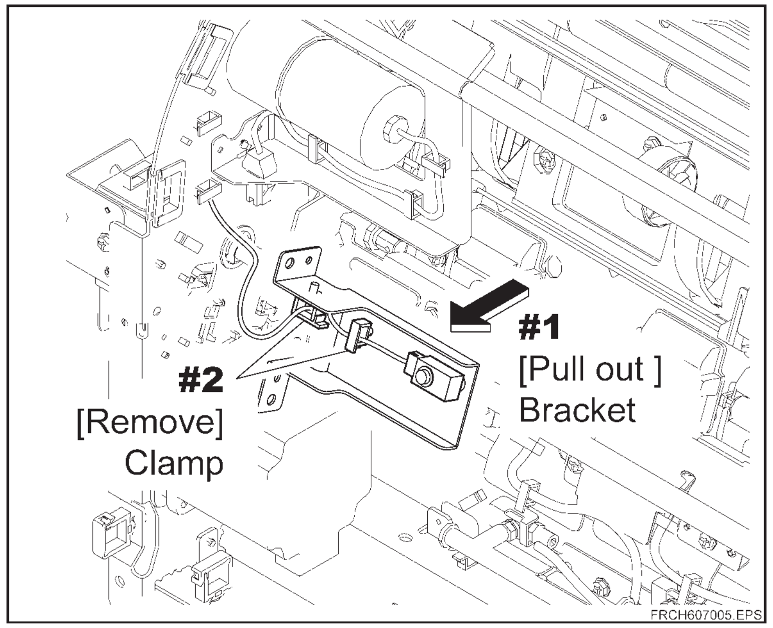
7. **Remove the retaining screws of the bracket.**


Bracket
[Remove]
Screw (DT3x6)
FRCH607006.EPS

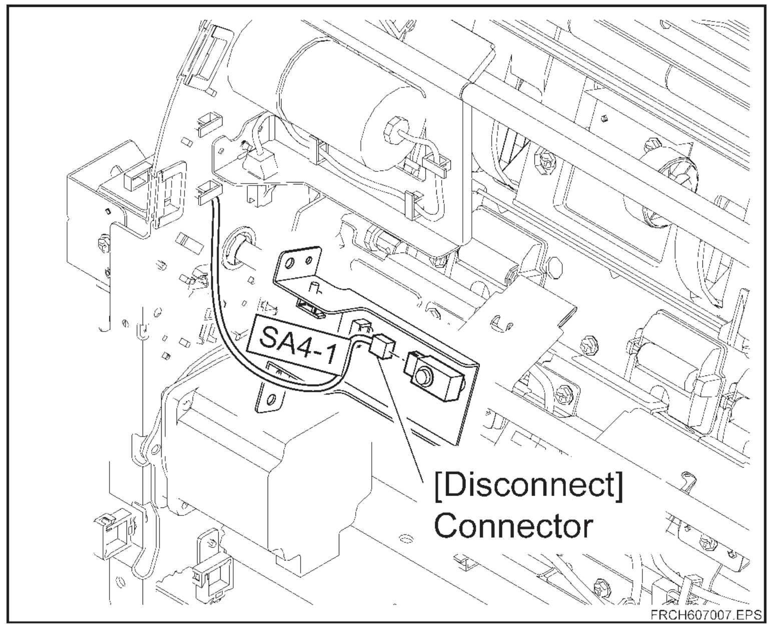
8. **Pull out the bracket, and unclamp the clamp.**

◆ NOTE ◆

Since the working space is small, exercise care not to get injured on your hands by the edge of the bracket.

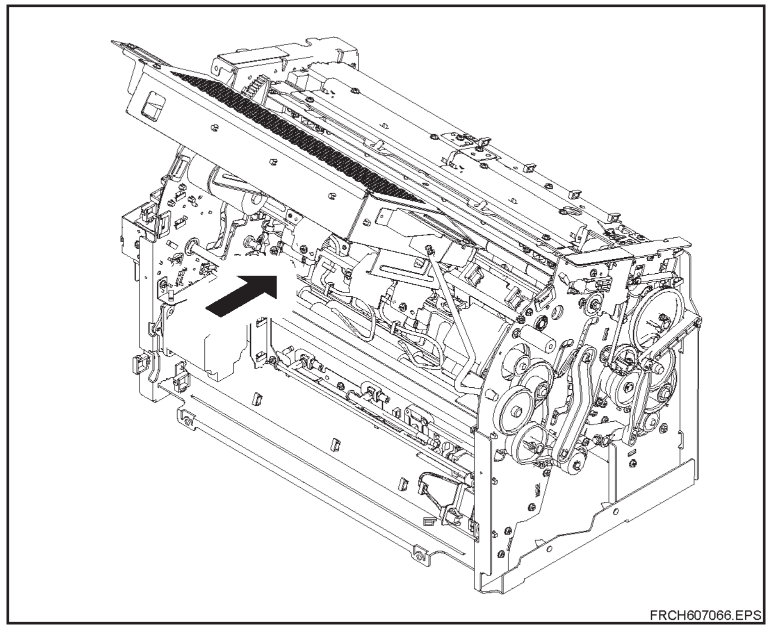

#1
[Pull out]
Bracket
#2
[Remove]
Clamp
FRCH607005.EPS

9. **Disconnect the connector.**

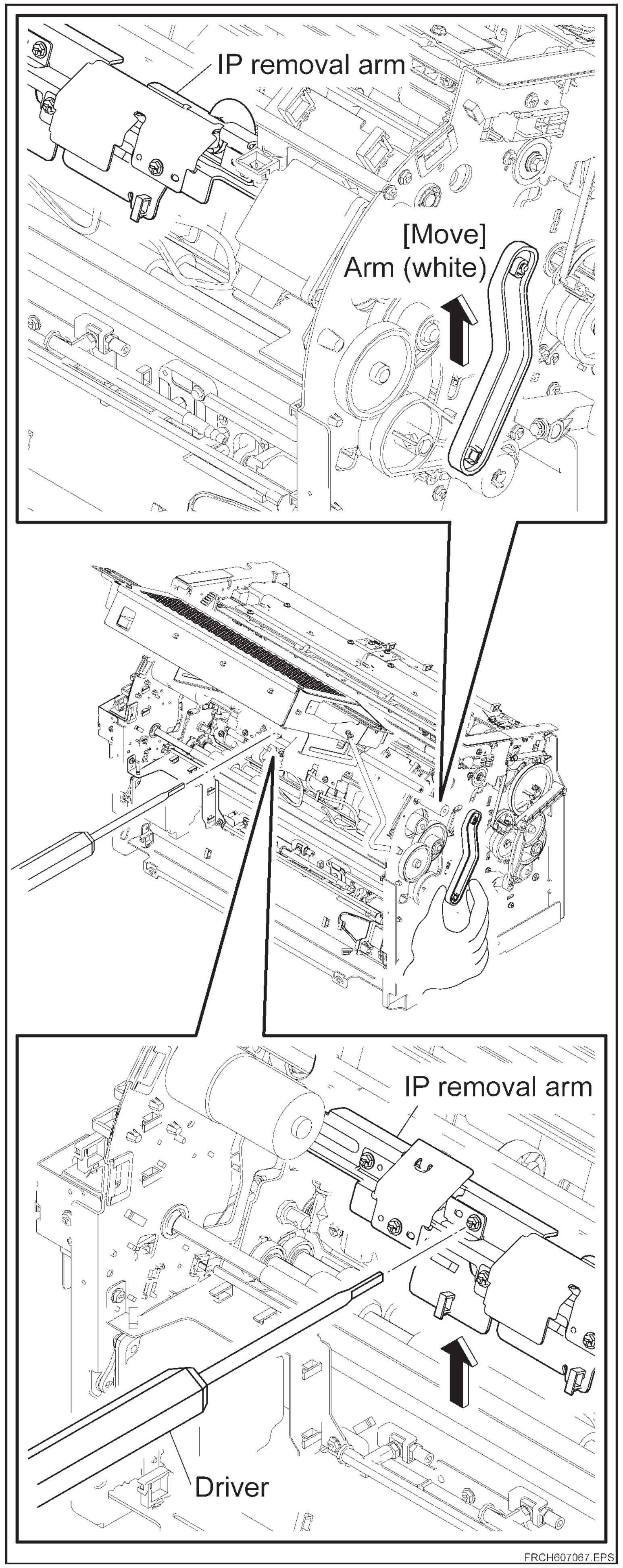

SA4-1
[Disconnect]
Connector
FRCH607007.EPS

7.4 Cleaning the Suction Cups (Left-Hand)

1. **Take the procedures from 2 to 6 from the direction indicated by the arrow in the figure.**


FRCH607066.EPS

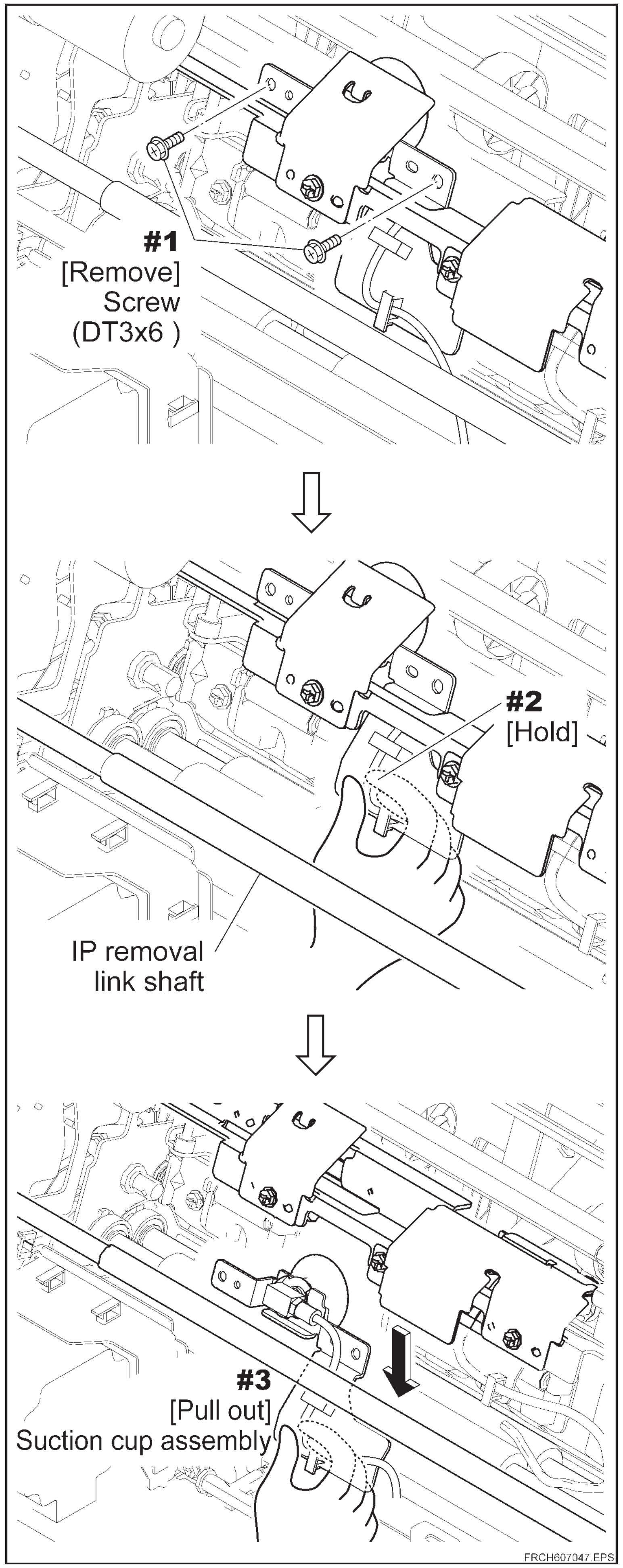
2. **Move the IP removal arm while holding the arm (white) to a position where the driver can access the screws of the IP removal arm.**


IP removal arm
[Move]
Arm (white)
IP removal arm
Driver
FRCH607067.EPS

3. **Remove the retaining screws of the suction cup assembly (left-hand). Hold the assembly on the position indicated in the figure, and pull out the assembly (left-hand) from below the IP removal link shaft.**

◆ NOTE ◆

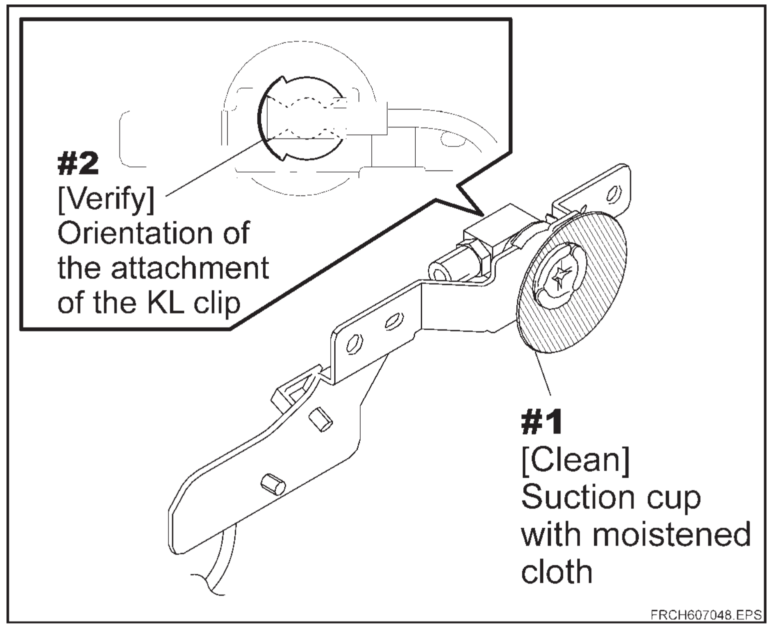
Exercise care not to damage the hose when pulling out the suction cup assembly.


#1
[Remove]
Screw
(DT3x6)
#2
[Hold]
IP removal
link shaft
#3
[Pull out]
Suction cup assembly
FRCH607047.EPS

4. **Clean the suction cup (left-hand) with a moistened cloth. Check the mounted orientation of the KL clip.**

◆ NOTES ◆

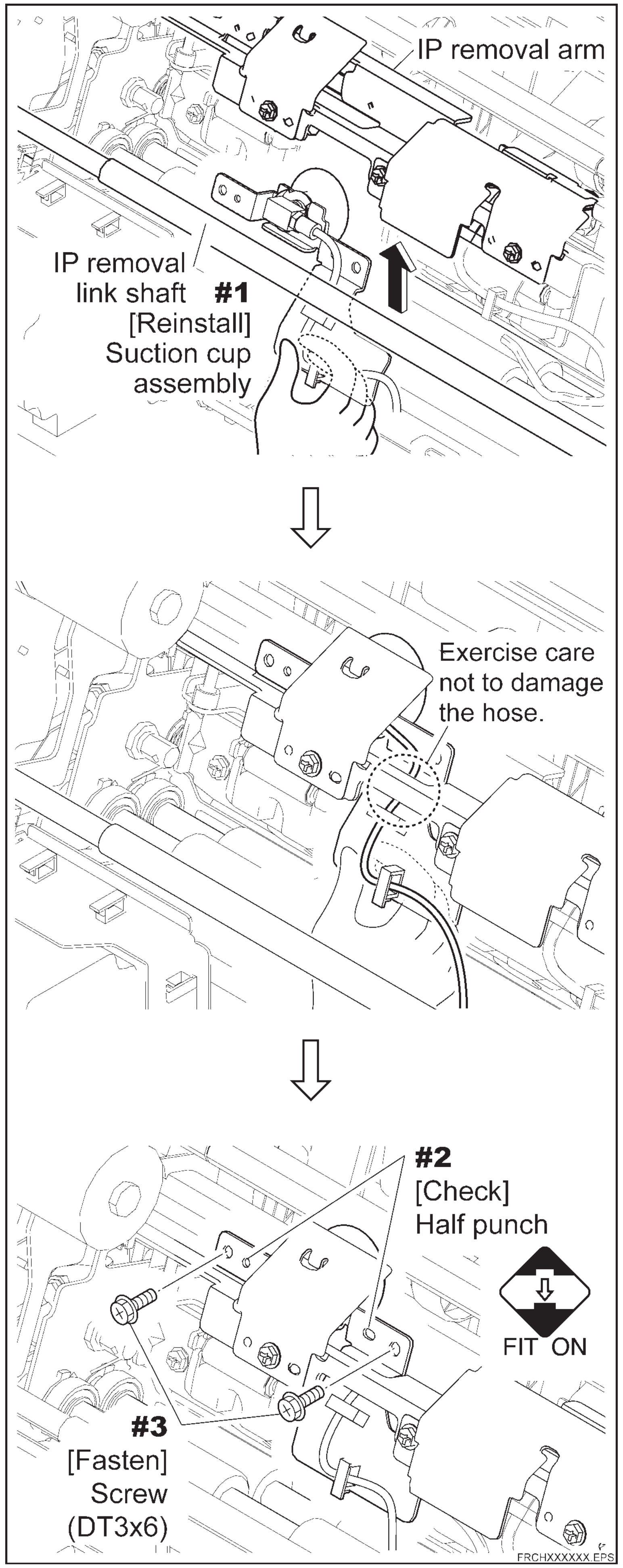
- *Exercise care not to excessively pull out the suction cup assembly, causing the hose to be damaged.*
- *Check to make sure that the KL clip is attached in the orientation indicated in the figure. Otherwise, the suction cup assembly cannot be correctly mounted on the IP removal arm.*


#2
[Verify]
Orientation of
the attachment
of the KL clip
#1
[Clean]
Suction cup
with moistened
cloth
FRCH607048.EPS

5. **Reinstall the suction cup assembly (left-hand) on the IP removal arm from below the IP removal link shaft. Make sure that the suction cup assembly (left-hand) is correctly mounted on the half punches, before retaining with the screws.**

◆ ***NOTES*** ◆

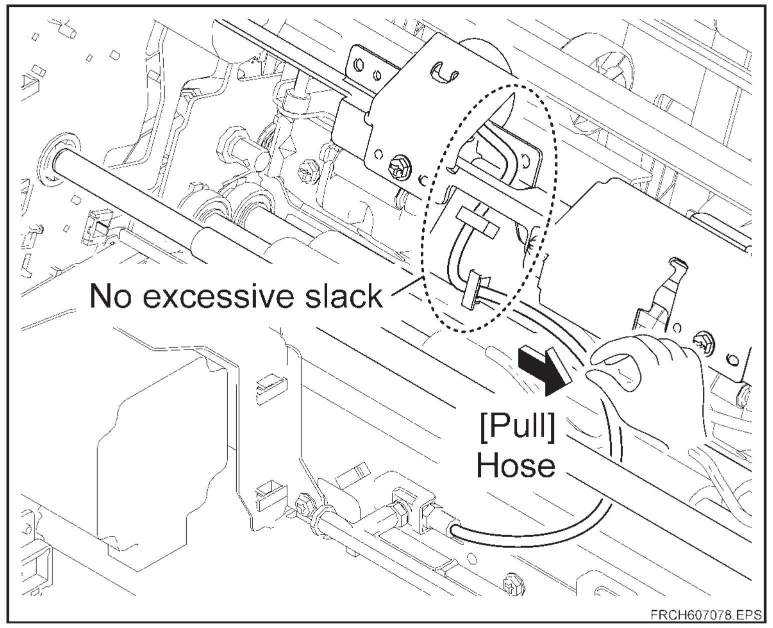
- *Exercise care not to damage the hose when reinstalling the suction cup assembly on the IP removal arm.*
- *Be sure to verify that the suction cup assembly has been correctly mounted on the half punches, before retaining with the screws.*


IP removal arm
IP removal link shaft
#1
[Reinstall]
Suction cup assembly
Exercise care not to damage the hose.
#2
[Check]
Half punch
FIT ON
#3
[Fasten]
Screw
(DT3x6)
FRCHXXXXXX.EPS

6. **Pull the hose in the direction indicated by the arrow, and make sure that there is no excessive slack of the hose in the region surrounded by the dotted line in the figure.**

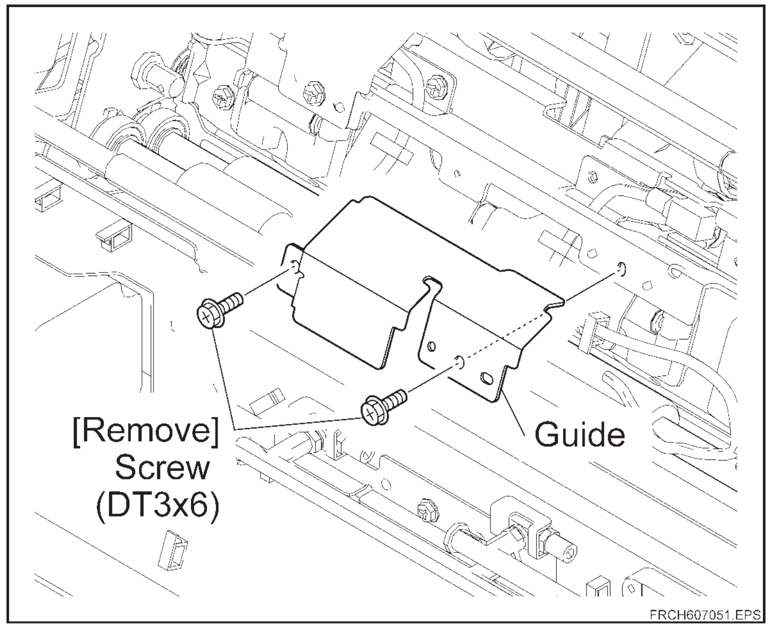
◆ ***NOTE*** ◆

If the hose has an excessive slack, the hose might get damaged as it is pulled when the IP removal arm is moved.


No excessive slack
[Pull]
Hose
FRCH607078.EPS

7.5 Cleaning the Suction Cups (Right-Hand)

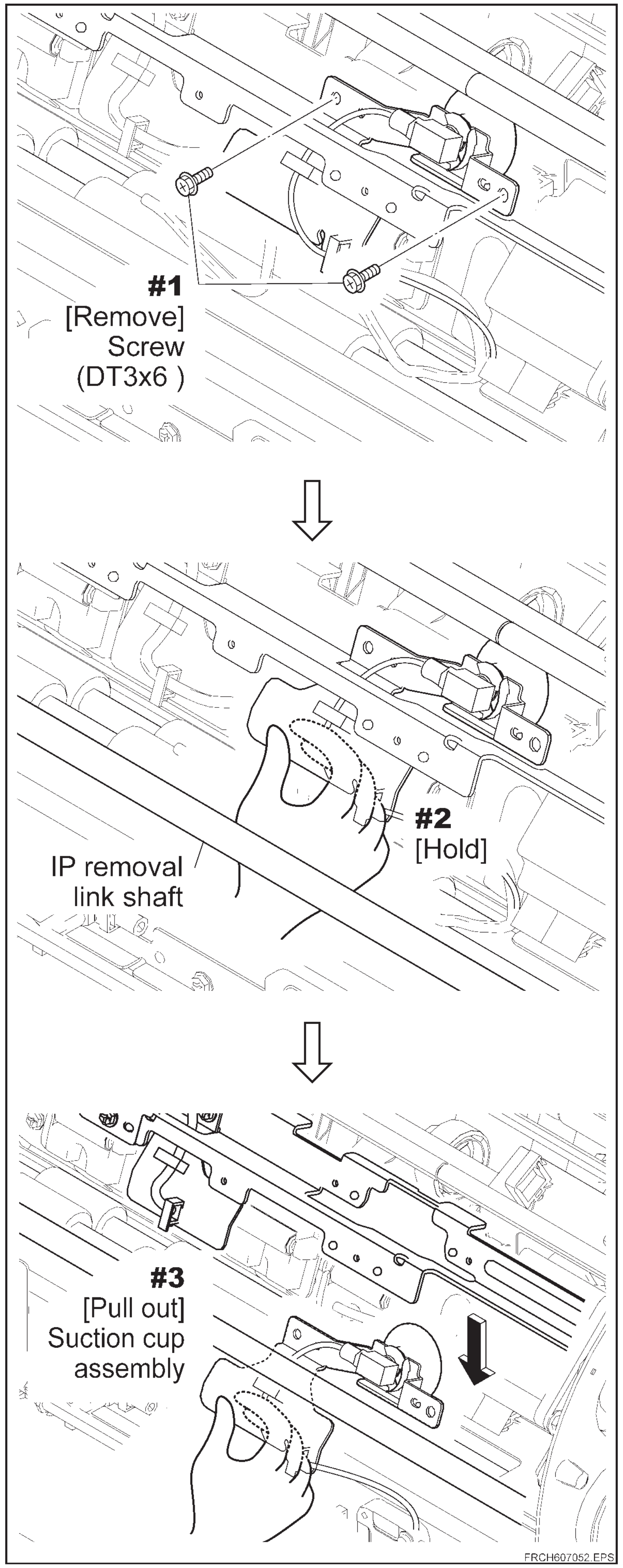
1. **Remove the screws, to remove the guide.**


[Remove]
Screw
(DT3x6)
Guide
FRCH607051.EPS

2. **Remove the retaining screws of the suction cup assembly (right-hand). Hold the assembly on the position indicated in the figure, and pull out the assembly (right-hand) from below the IP removal link shaft.**

◆ NOTE ◆

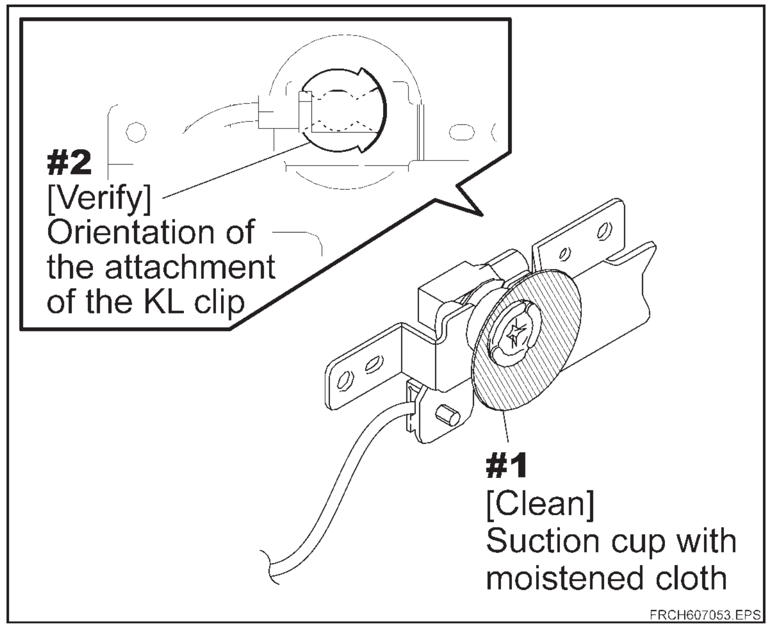
Exercise care not to damage the hose when pulling out the suction cup assembly.


#1
[Remove]
Screw
(DT3x6)
#2
[Hold]
IP removal
link shaft
#3
[Pull out]
Suction cup
assembly
FRCH607052.EPS

3. **Clean the suction cup (right-hand) with a moistened cloth. Check the mounted orientation of the KL clip.**

◆ NOTES ◆

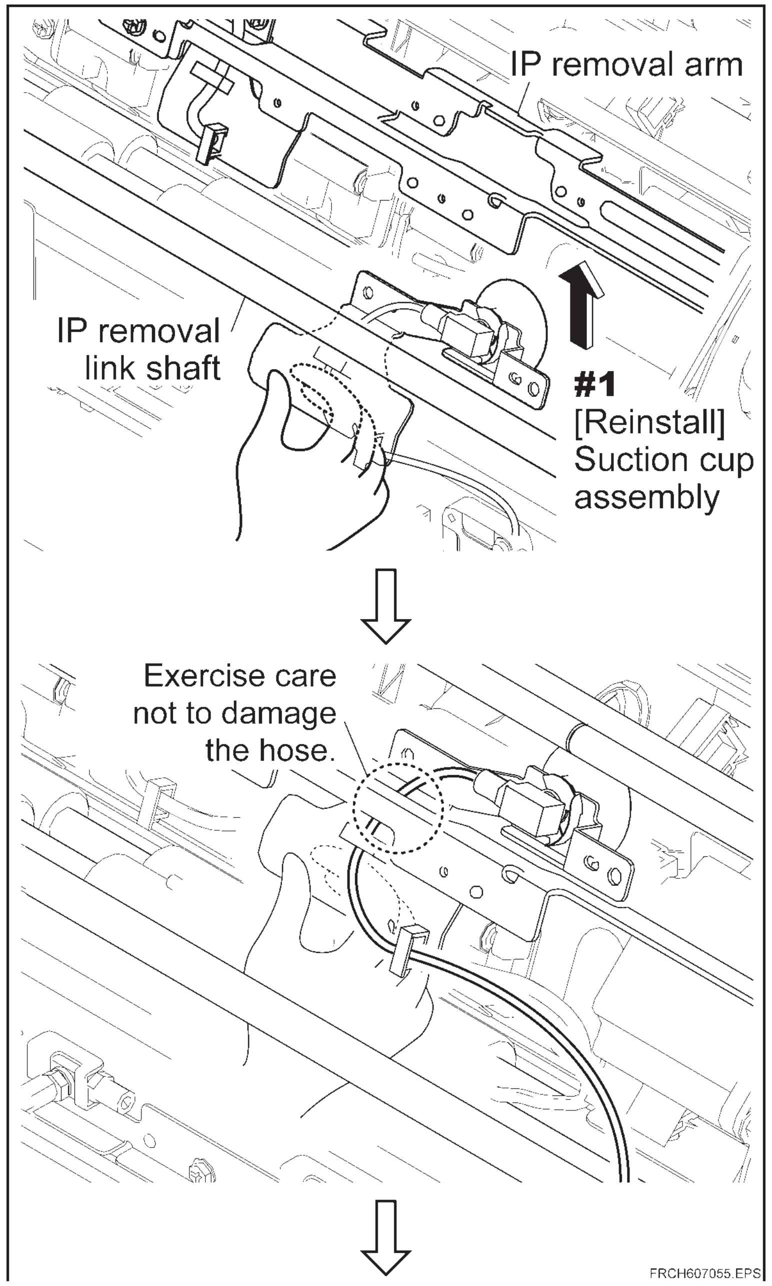
- *Exercise care not to excessively pull out the suction cup assembly, causing the hose to be damaged.*
- *Check to make sure that the KL clip is attached in the orientation indicated in the figure. Otherwise, the suction cup assembly cannot be correctly mounted on the IP removal arm.*

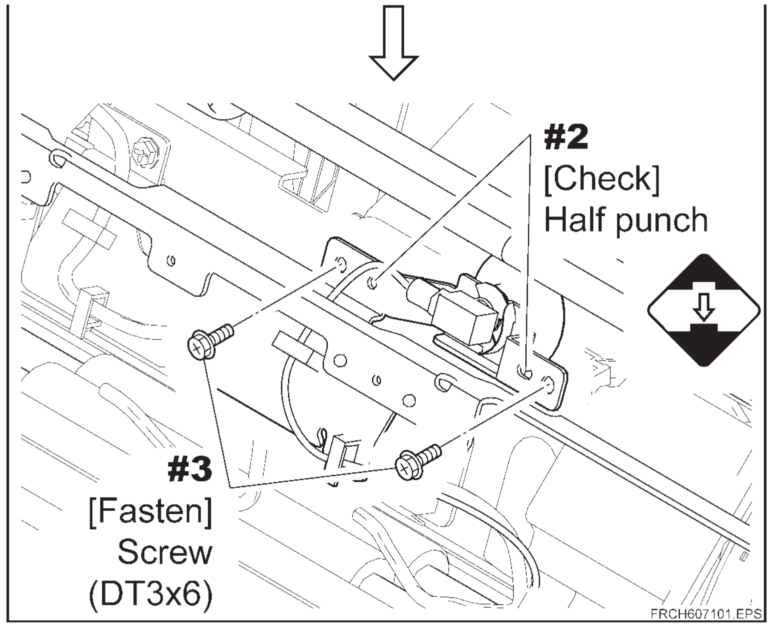

#2
[Verify]
Orientation of the attachment of the KL clip
#1
[Clean]
Suction cup with moistened cloth
FRCH607053.EPS

4. **Reinstall the suction cup assembly (right-hand) on the IP removal arm from below the IP removal link shaft. Make sure that the suction cup assembly (right-hand) is correctly mounted on the half punches, before retaining with the screws.**

◆ NOTES ◆

- *Exercise care not to damage the hose when reinstalling the suction cup assembly on the IP removal arm.*
- *Be sure to verify that the suction cup assembly has been correctly mounted on the half punches, before retaining with the screws.*

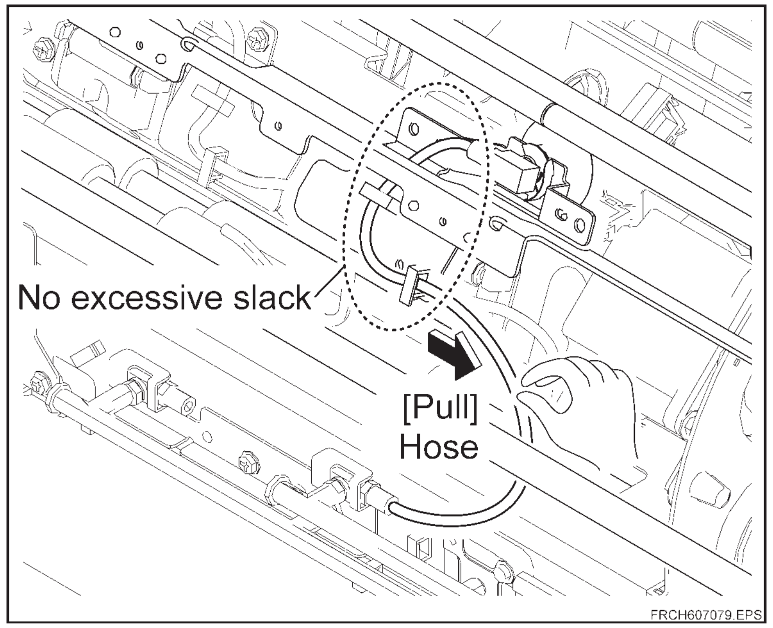

IP removal arm
IP removal link shaft
#1
[Reinstall]
Suction cup assembly
Exercise care not to damage the hose.
FRCH607055.EPS


#2
[Check]
Half punch
#3
[Fasten]
Screw
(DT3x6)
FRCH607101.EPS

5. **Pull the hose in the direction indicated by the arrow, and make sure that there is no excessive slack of the hose in the region surrounded by the dotted line in the figure.**

◆ NOTE ◆

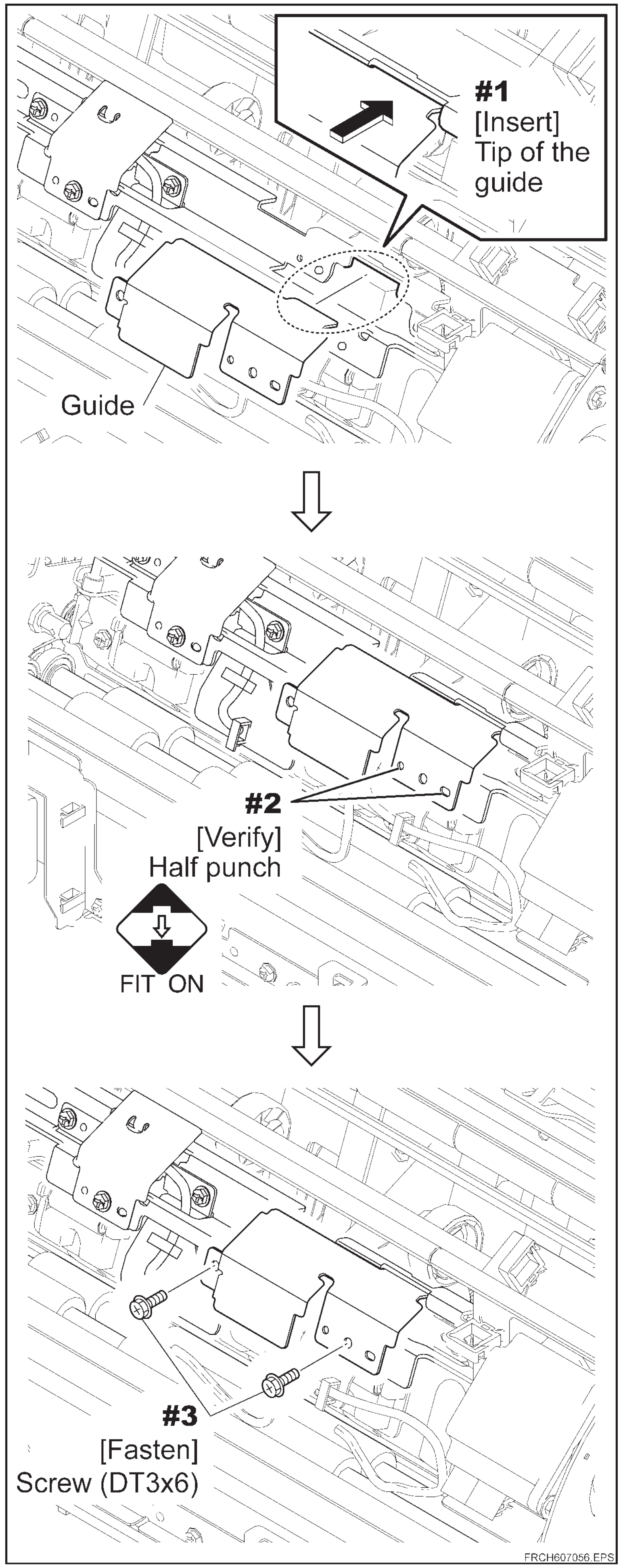
If the hose has an excessive slack, the hose might get damaged as it is pulled when the IP removal arm is moved.


No excessive slack
[Pull]
Hose
FRCH607079.EPS

6. **Insert the tip of the guide into an aperture of the bracket before mounting the guide. Be sure to verify that the guide is correctly mounted on the half punches, before retaining with the screws.**

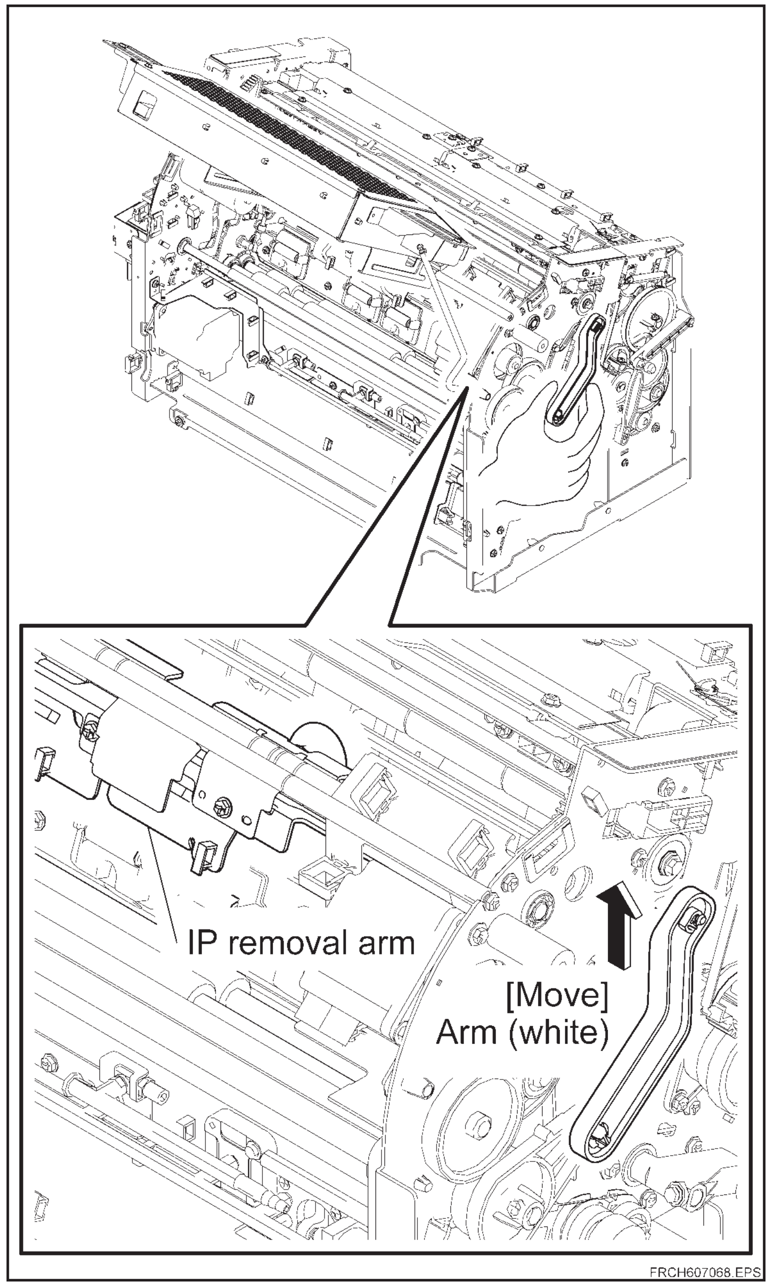
◆ NOTE ◆

Be sure to verify that the guide is correctly mounted on the half punches, before retaining with the screws.

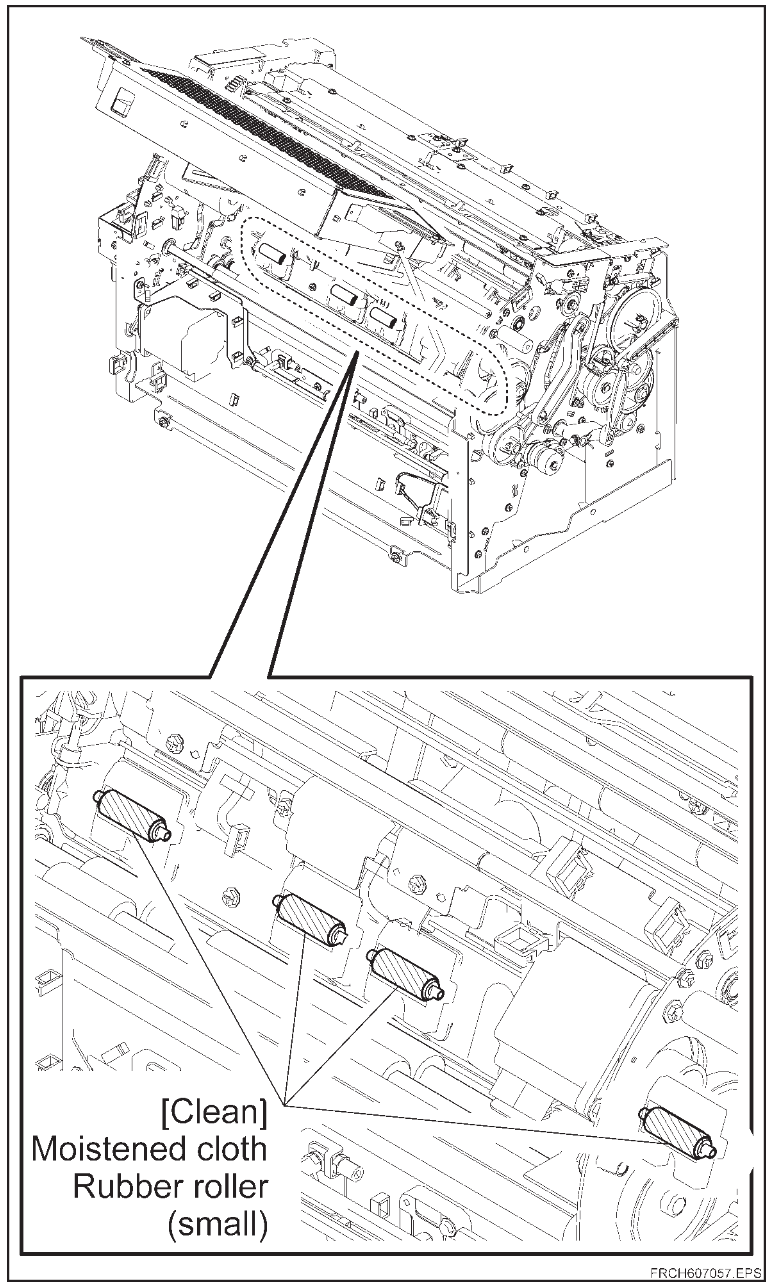

#1
[Insert]
Tip of the guide
Guide
#2
[Verify]
Half punch
FIT ON
#3
[Fasten]
Screw (DT3x6)
FRCH607056.EPS

7.6 Cleaning the Rubber Rollers (Small)

1. **Hold the arm (white) to lift the IP removal arm to the uppermost position.**


IP removal arm
[Move]
Arm (white)
FRCH607068.EPS

2. **Clean the rubber roller (small) with a moistened cloth.**

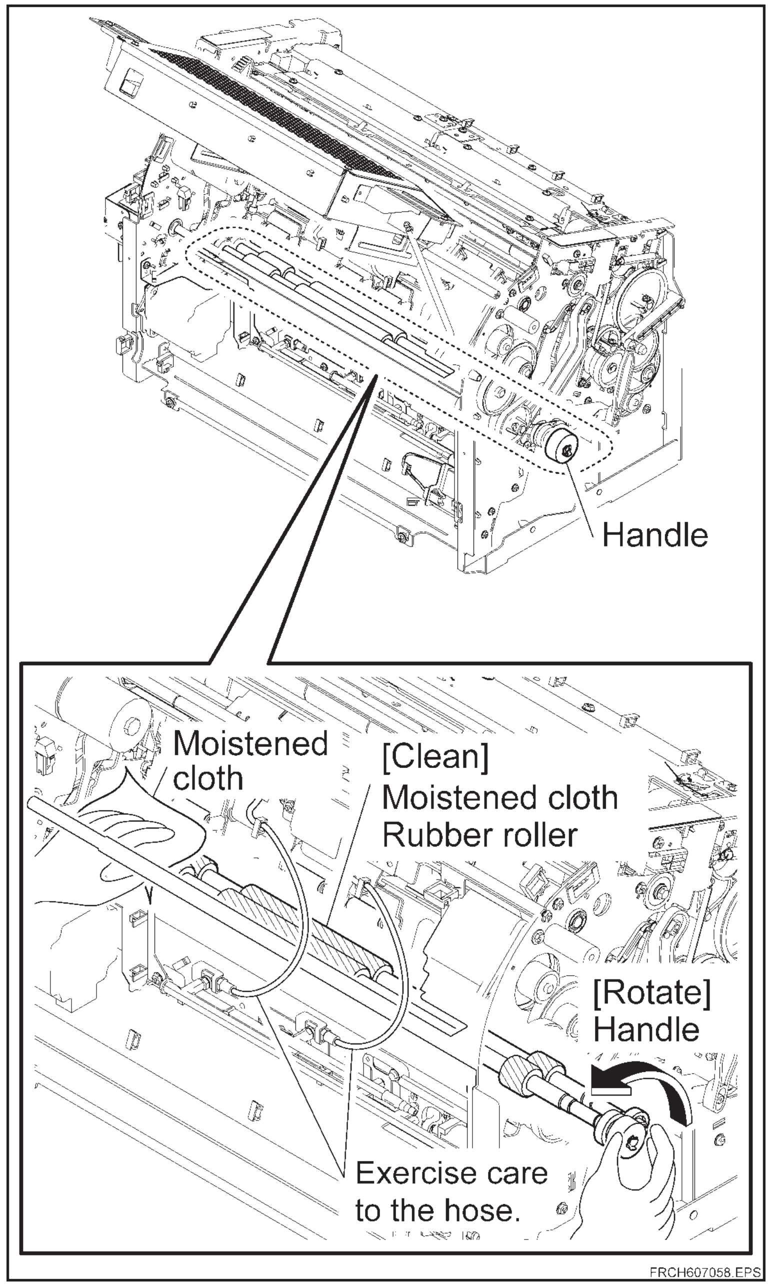

[Clean]
Moistened cloth
Rubber roller
(small)
FRCH607057.EPS

7.7 Cleaning the Rubber Rollers

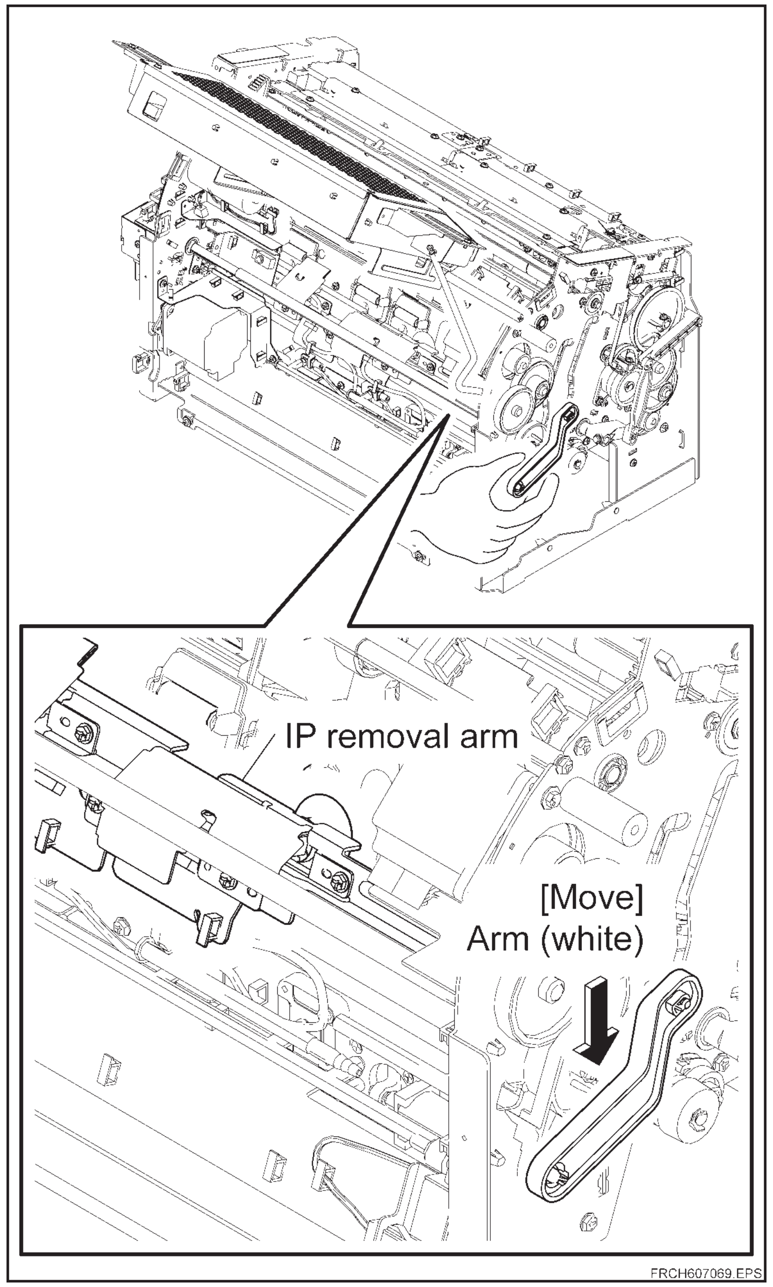
1. **Push the moistened cloth against the rubber roller. Clean the roller while rotating it by the handle.**

◆ NOTE ◆

Exercise care not to damage or pull the hose when pushing the moistened cloth against the rubber roller.

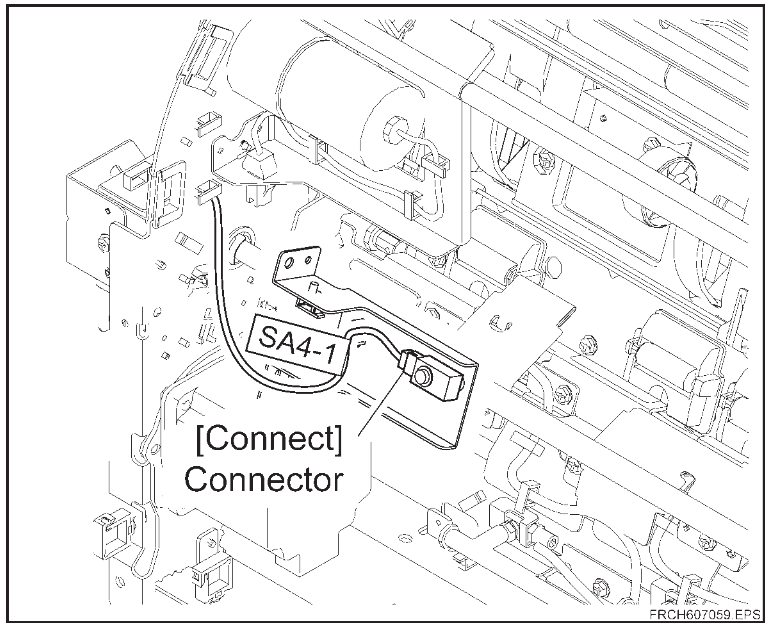

Handle
Moistened cloth
[Clean]
Moistened cloth
Rubber roller
[Rotate]
Handle
Exercise care to the hose.
FRCH607058.EPS

2. **Hold the arm (white) to move the IP removal arm to the lowermost position.**

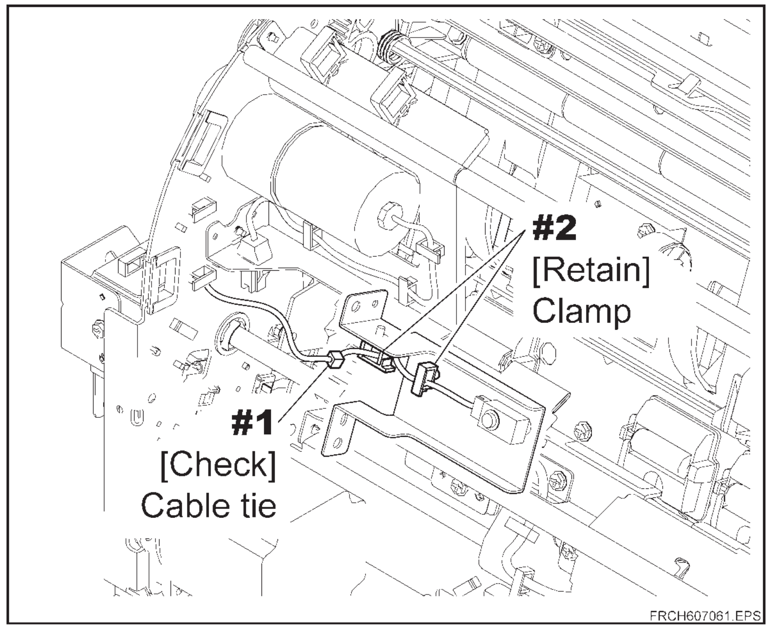

IP removal arm
[Move]
Arm (white)
FRCH607069.EPS

7.8 Installing the Components

1. **Connect the connector.**


SA4-1
[Connect]
Connector
FRCH607059.EPS

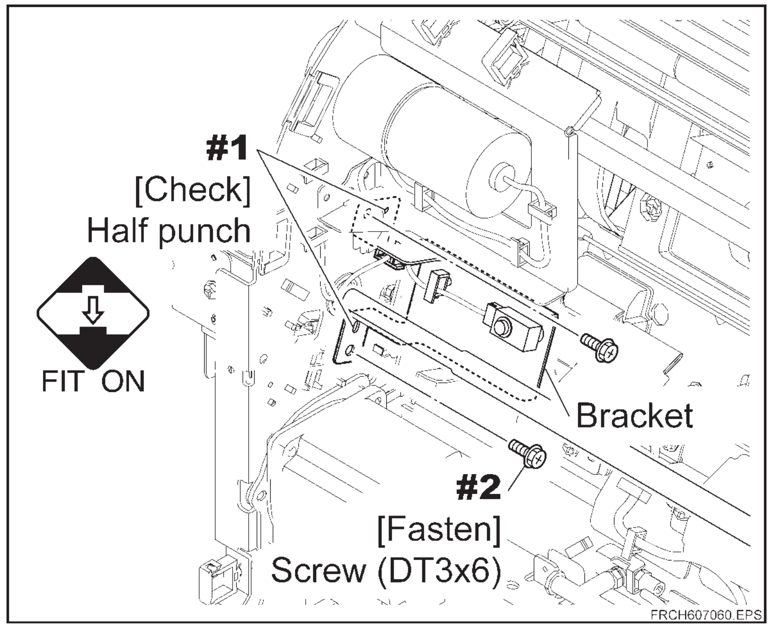
2. **Check to make sure that the cable tie is positioned as indicated in the figure. Then, retain the cable with the clamps.**


#2
[Retain]
Clamp
#1
[Check]
Cable tie
FRCH607061.EPS

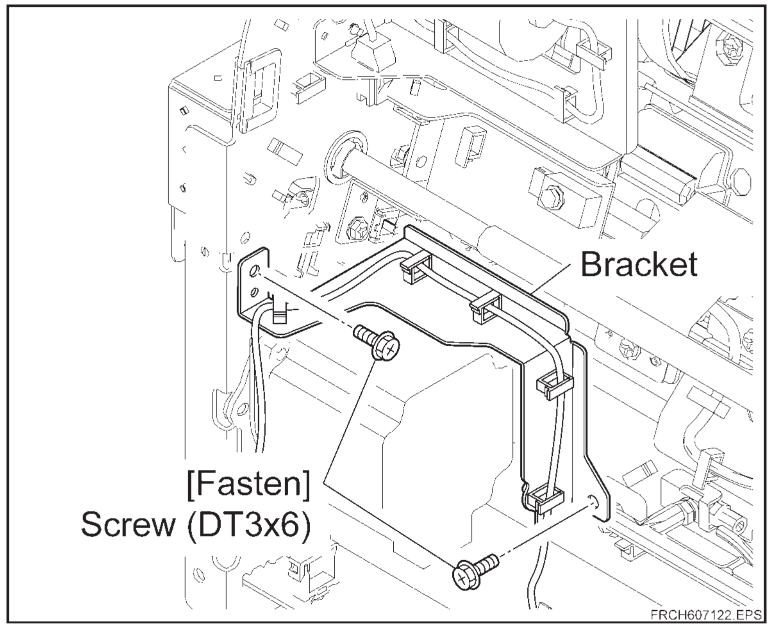
3. **Check to make sure that the bracket is correctly mounted on the half punches, before retaining with the screws.**

◆ ***NOTE*** ◆

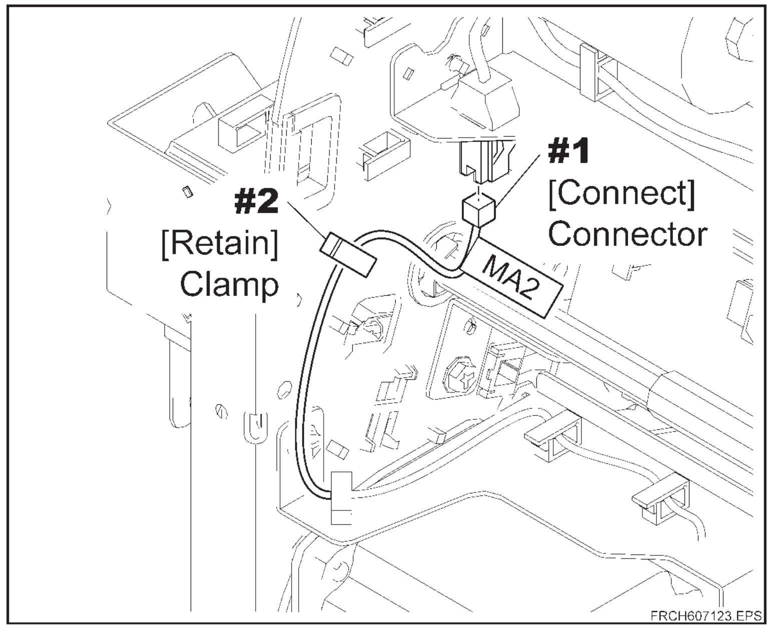
Always make sure that the bracket is correctly mounted on the half punches, before retaining with the screws.


#1
[Check]
Half punch
FIT ON
Bracket
#2
[Fasten]
Screw (DT3x6)
FRCH607060.EPS

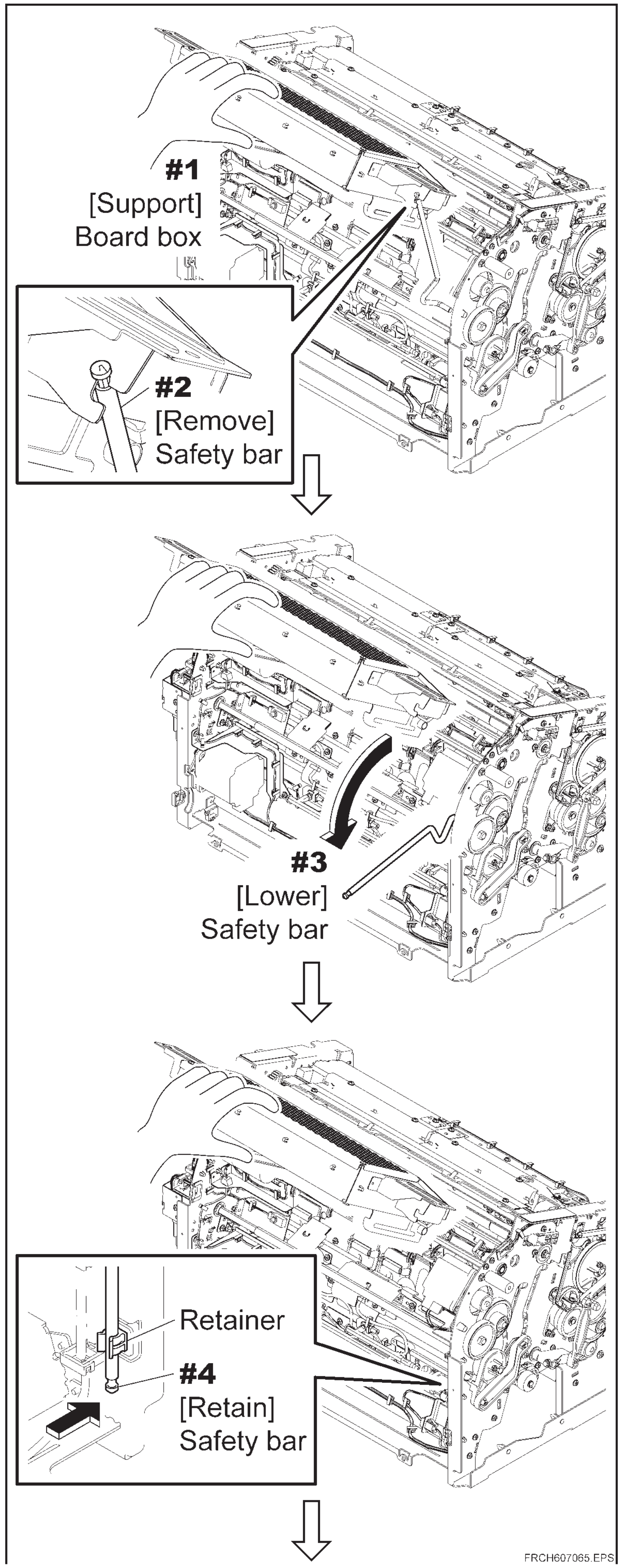
4. **Reinstall the bracket, and retain with the screws.**

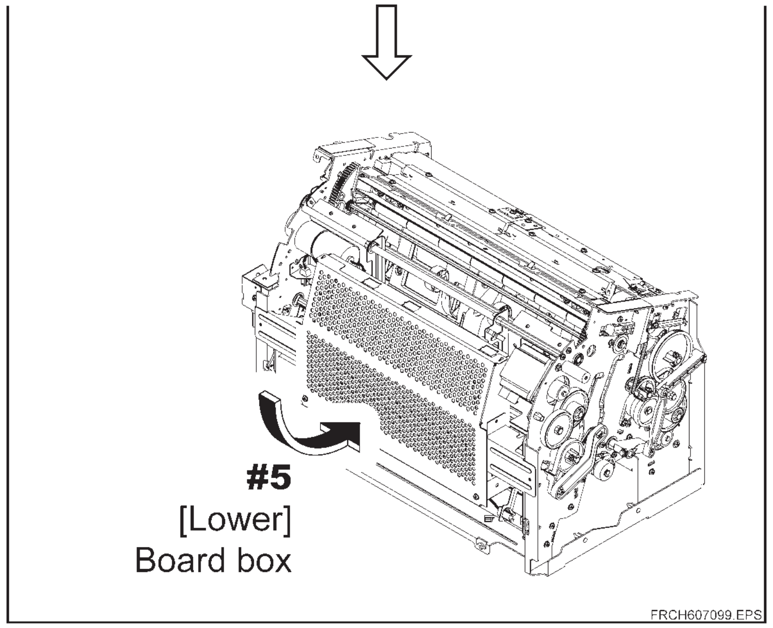

Bracket
[Fasten]
Screw (DT3x6)
FRCH607122.EPS

5. **Connect the connector, and retain the cable with the clamp.**

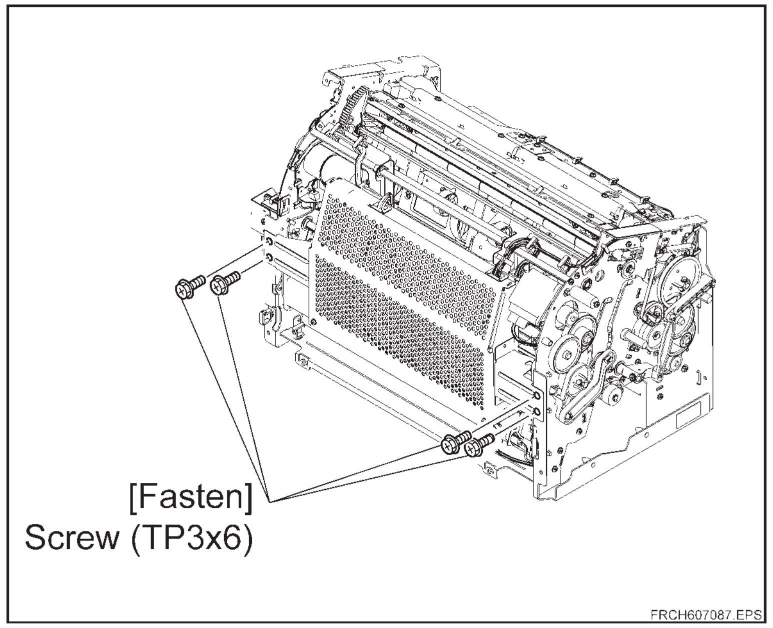

#1
[Connect]
Connector
#2
[Retain]
Clamp
MA2
FRCH607123.EPS

6. **While holding the position indicated in the figure and supporting the board box, remove the safety bar. Lower the safety bar and fix to the retainer. Then lower the board box.**


#1
[Support]
Board box
#2
[Remove]
Safety bar
#3
[Lower]
Safety bar
Retainer
#4
[Retain]
Safety bar
FRCH607065.EPS

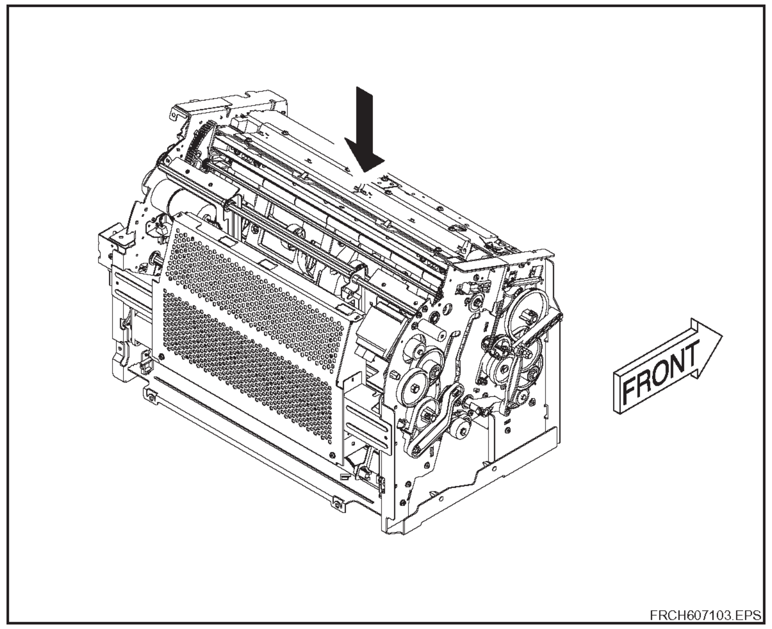

#5
[Lower]
Board box
FRCH607069.EPS

7. **Reinstall the screws.**

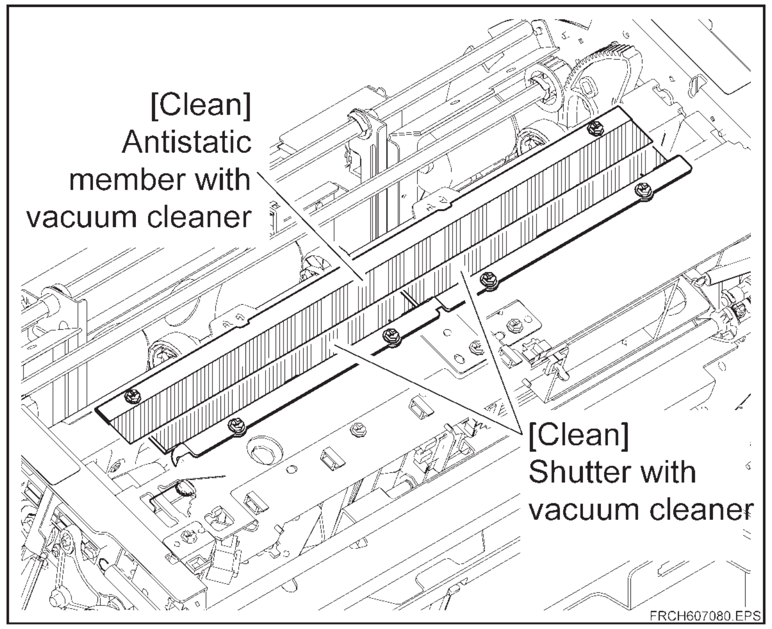

[Fasten]
Screw (TP3x6)
FRCH607087.EPS

7.9 Cleaning the Antistatic Member and Shutter

1. **Take the procedure 2 from the direction indicated by the arrow in the figure.**

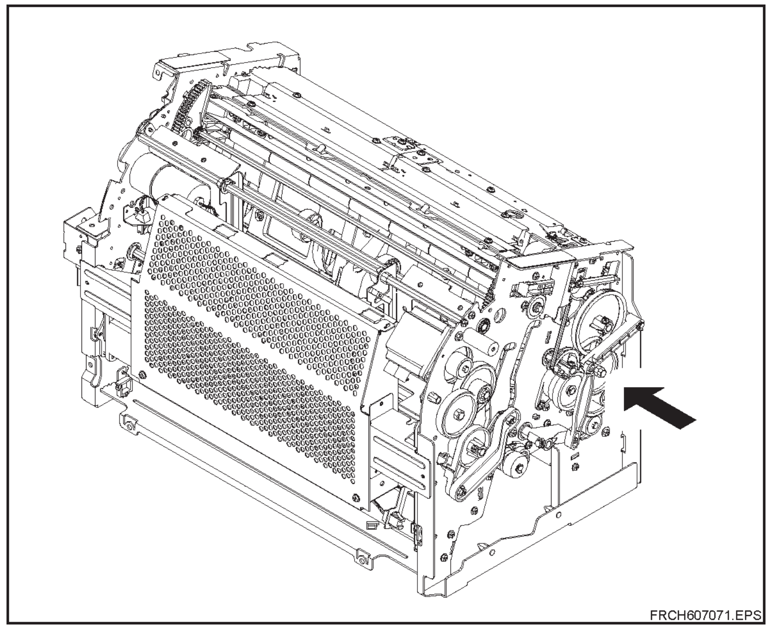

FRONT
FRCH607103.EPS

2. **Clean the antistatic member and the shutter with a vacuum cleaner.**


[Clean]
Antistatic
member with
vacuum cleaner
[Clean]
Shutter with
vacuum cleaner
FRCH607080.EPS

7.10 Replacing the Dumper (Opposite Reference Side)

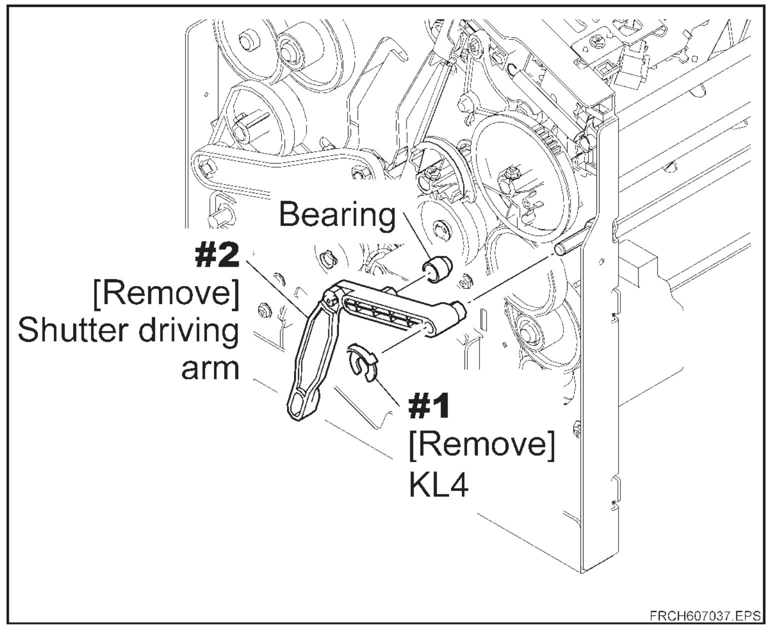
1. **Take the procedures from 2 to 4 from the direction indicated by the arrow in the figure.**


FRCH607071.EPS

2. **Remove the KL clip, and remove the shutter driving arm.**

◆ ***NOTE*** ◆

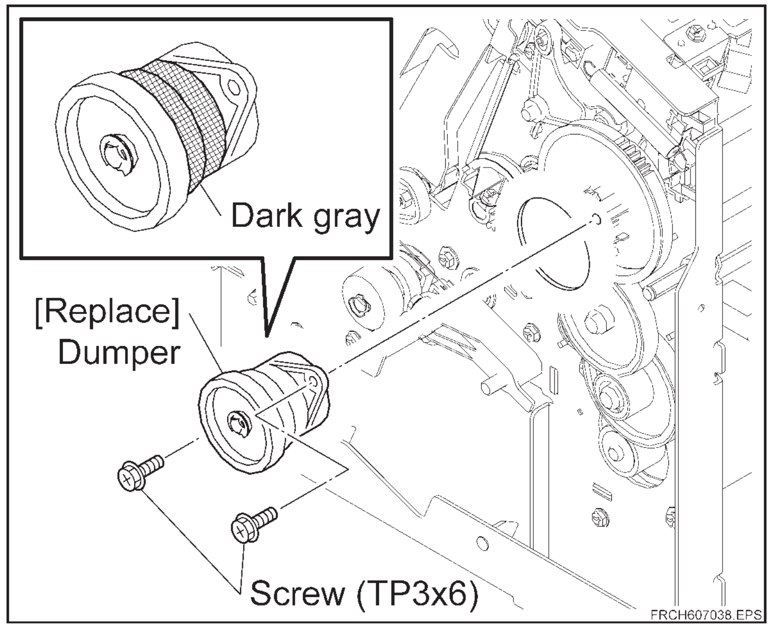
When the shutter driving arm is removed, the bearing installed inside the arm might drop. Exercise care not to miss the bearing.


Bearing
#2
[Remove]
Shutter driving arm
#1
[Remove]
KL4
FRCH607037.EPS

3. **Replace the dumper (opposite reference side).**

◆ ***NOTE*** ◆

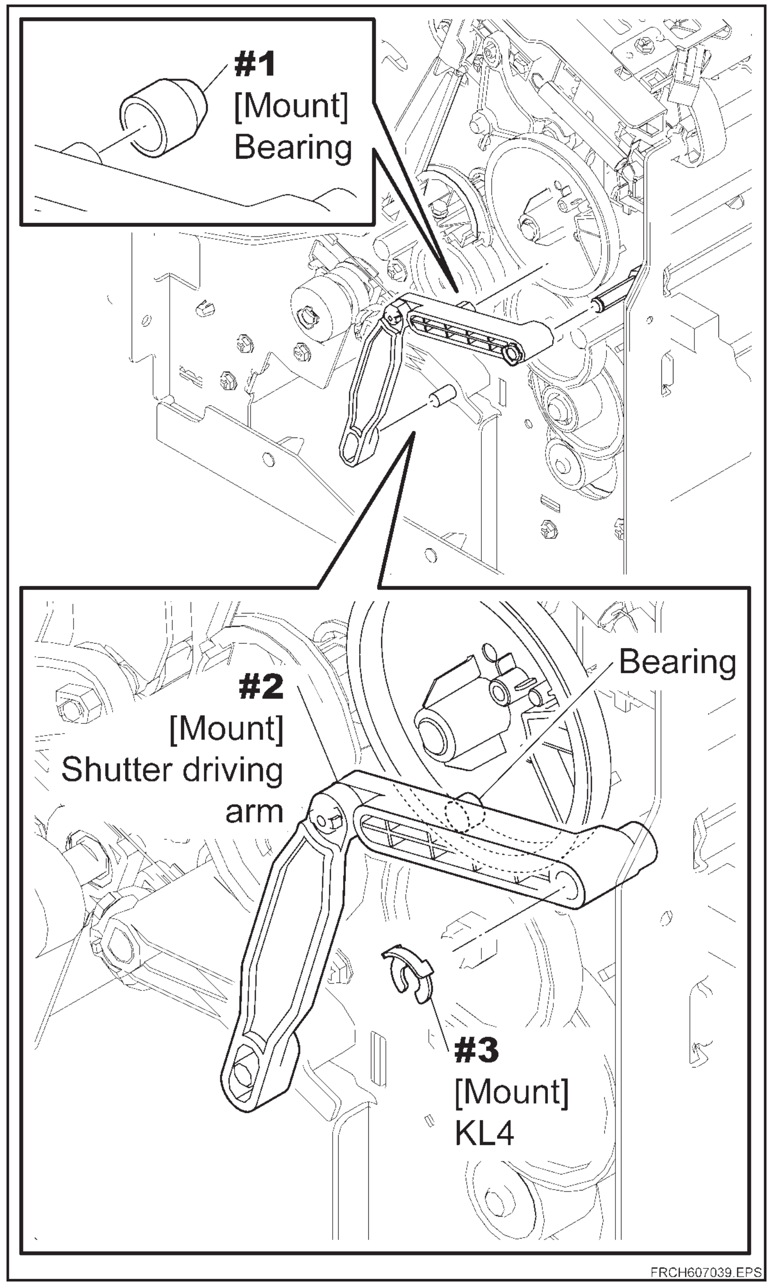
The dumpers on the reference side and the opposite reference side are different in color. Put on the dumper with a dark gray barrel on the opposite reference side.


Dark gray
[Replace]
Dumper
Screw (TP3x6)
FRCH607038.EPS

4. **Install the bearing inside the shutter driving arm. Then mount the shutter driving arm and the KL clip.**

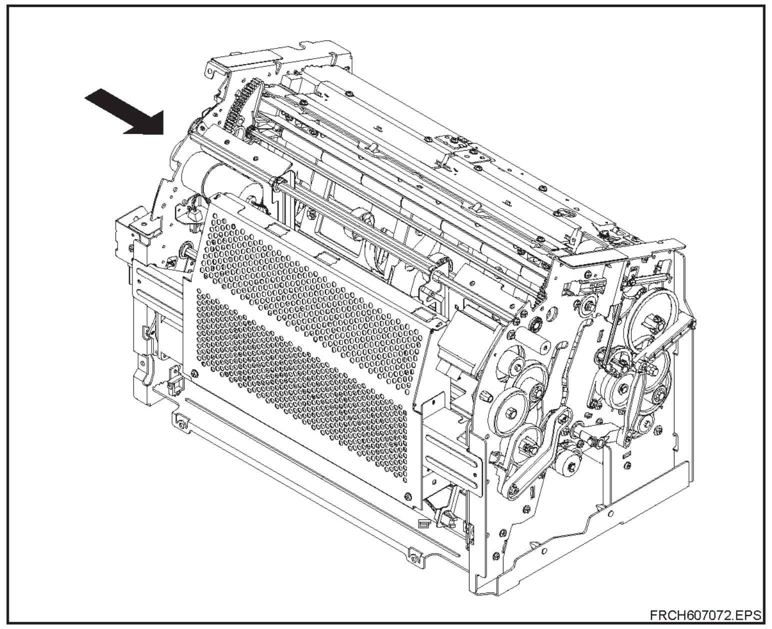
◆ ***NOTES*** ◆

- *Pay attention to the orientation of mounting the bearing.*
- *Mount the shutter driving arm and the bearing in place referring to the figure.*

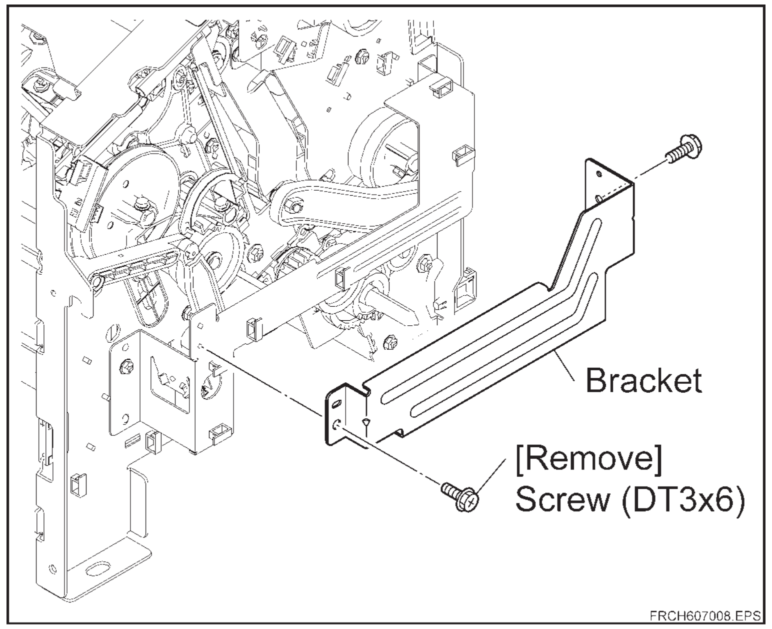

#1
[Mount]
Bearing
#2
[Mount]
Shutter driving arm
Bearing
#3
[Mount]
KL4
FRCH607039.EPS

7.11 Replacing the Dumper (Reference Side)

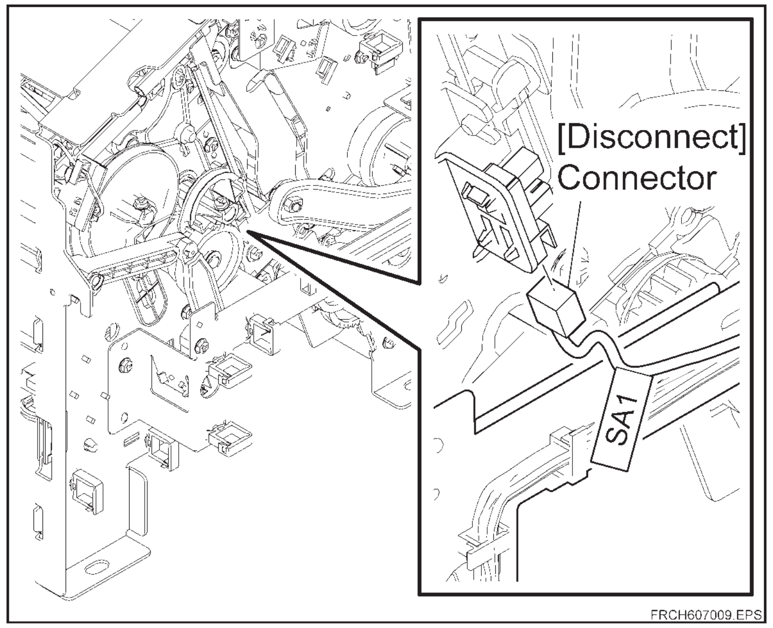
1. **Take the procedures from 2 to 14 from the direction indicated by the arrow in the figure.**


FRCH607072.EPS

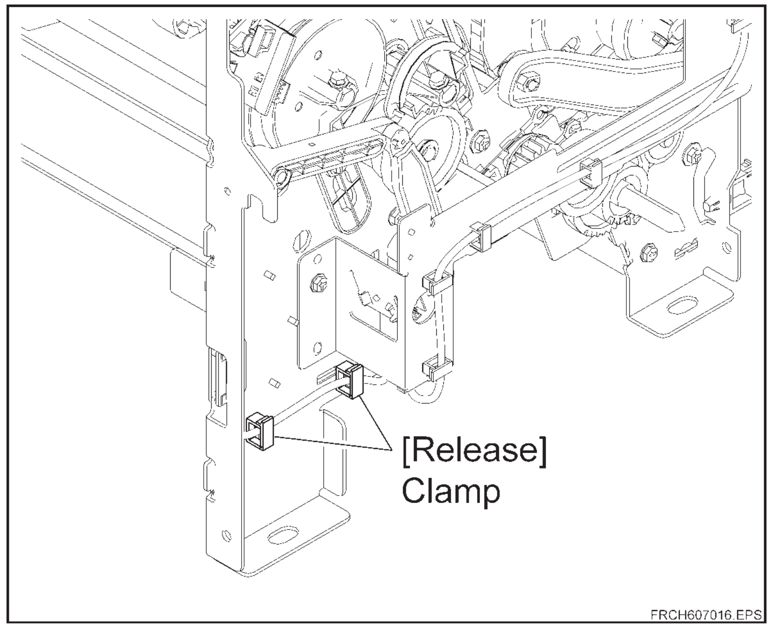
2. **Remove the bracket.**


Bracket
[Remove]
Screw (DT3x6)
FRCH607008.EPS

3. **Disconnect the connector.**


[Disconnect]
Connector
SA1
FRCH607009.EPS

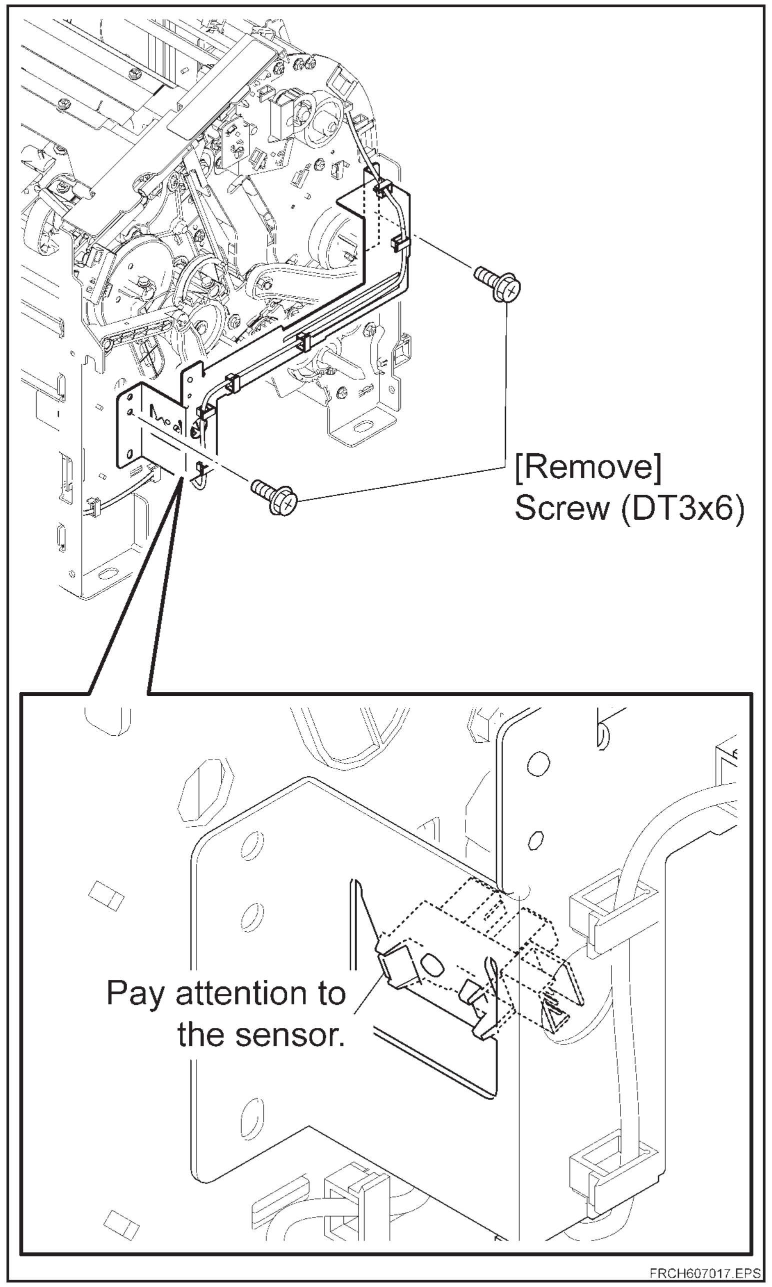
4. **Release the clamps.**


[Release]
Clamp
FRCH607016.EPS

5. **Remove the screws.**

◆ NOTES ◆

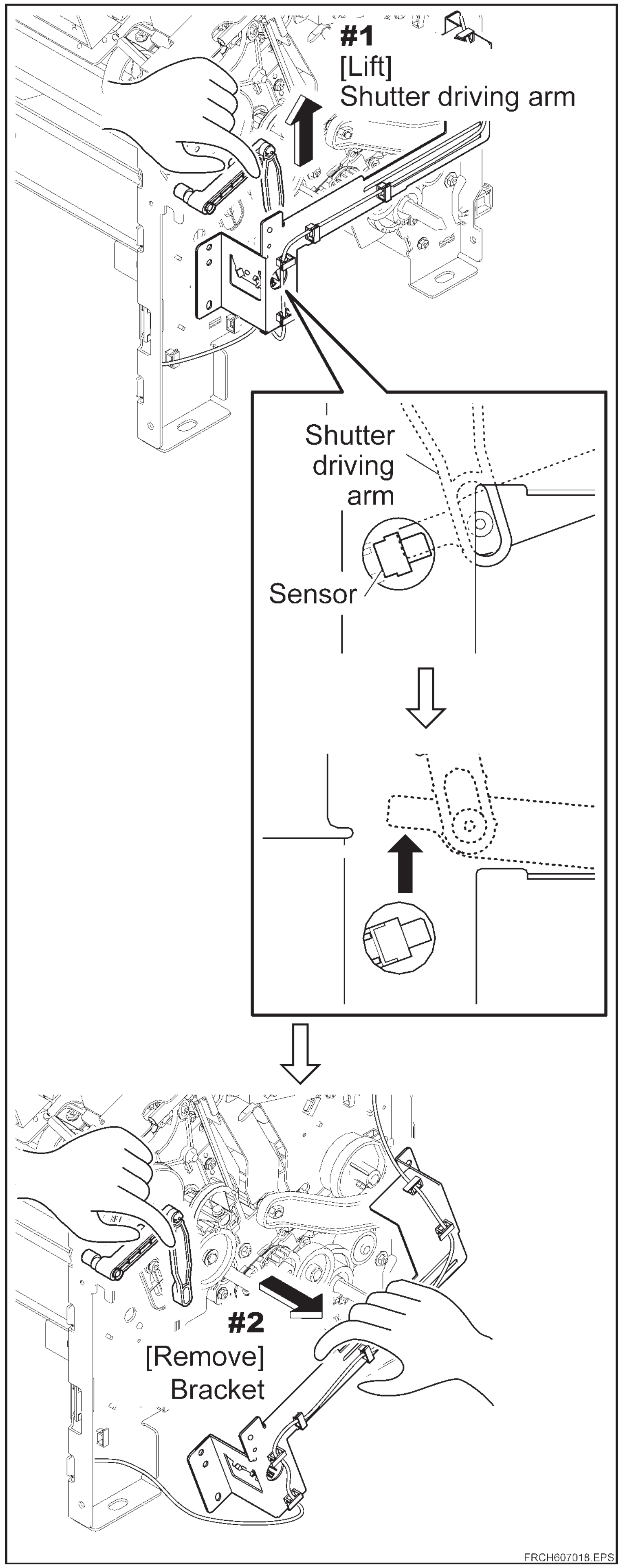
- *Do not remove the bracket after the screws are removed. If the bracket is removed in this state, the sensor installed inside the bracket might get damaged.*
- *If the bracket lowers and disengages after the screws are removed, the procedure 6 is not necessary. Proceed to the procedure 7.*


[Remove]
Screw (DT3x6)
Pay attention to the sensor.
FRCH607017.EPS

6. **Remove the bracket while lifting up the shutter driving arm.**

◆ NOTES ◆

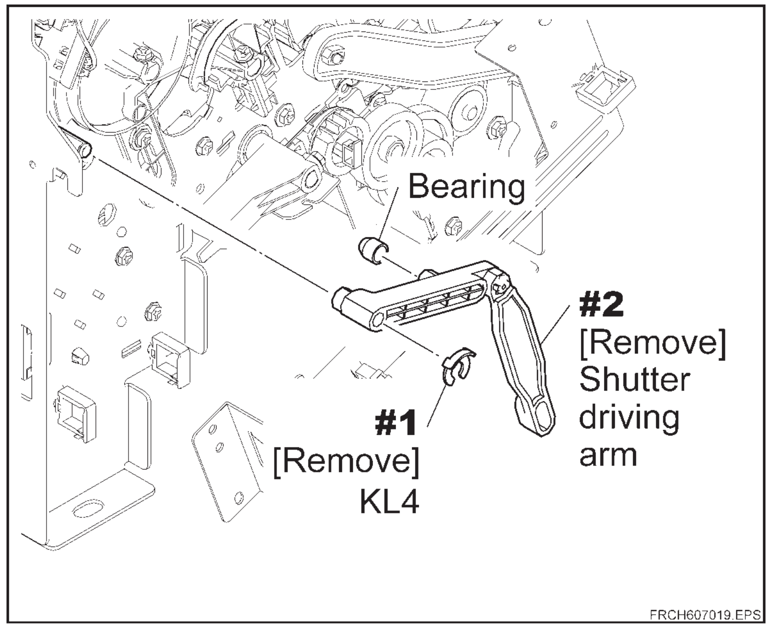
- *Always remove the bracket with the shutter driving arm lifted up. Otherwise, the sensor installed on the bracket might interfere with the shutter driving arm, resulting in the damage of the sensor.*
- *The removed bracket has the cable left attached. Exercise care not to damage the cable.*


#1
[Lift]
Shutter driving arm
Shutter driving arm
Sensor
#2
[Remove]
Bracket
FRCH607018.EPS

7. **Remove the KL clip, and remove the shutter driving arm.**

◆ NOTE ◆

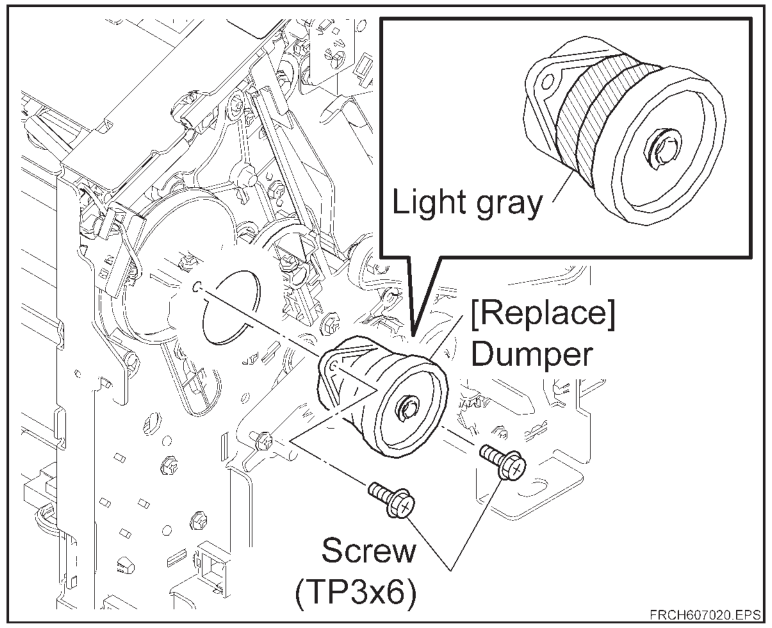
When the shutter driving arm is removed, the bearing installed inside the arm might drop. Exercise care not to miss the bearing.


Bearing
#2
[Remove]
Shutter
driving
arm
#1
[Remove]
KL4
FRCH607019.EPS

8. **Replace the dumper (reference side).**

◆ NOTE ◆

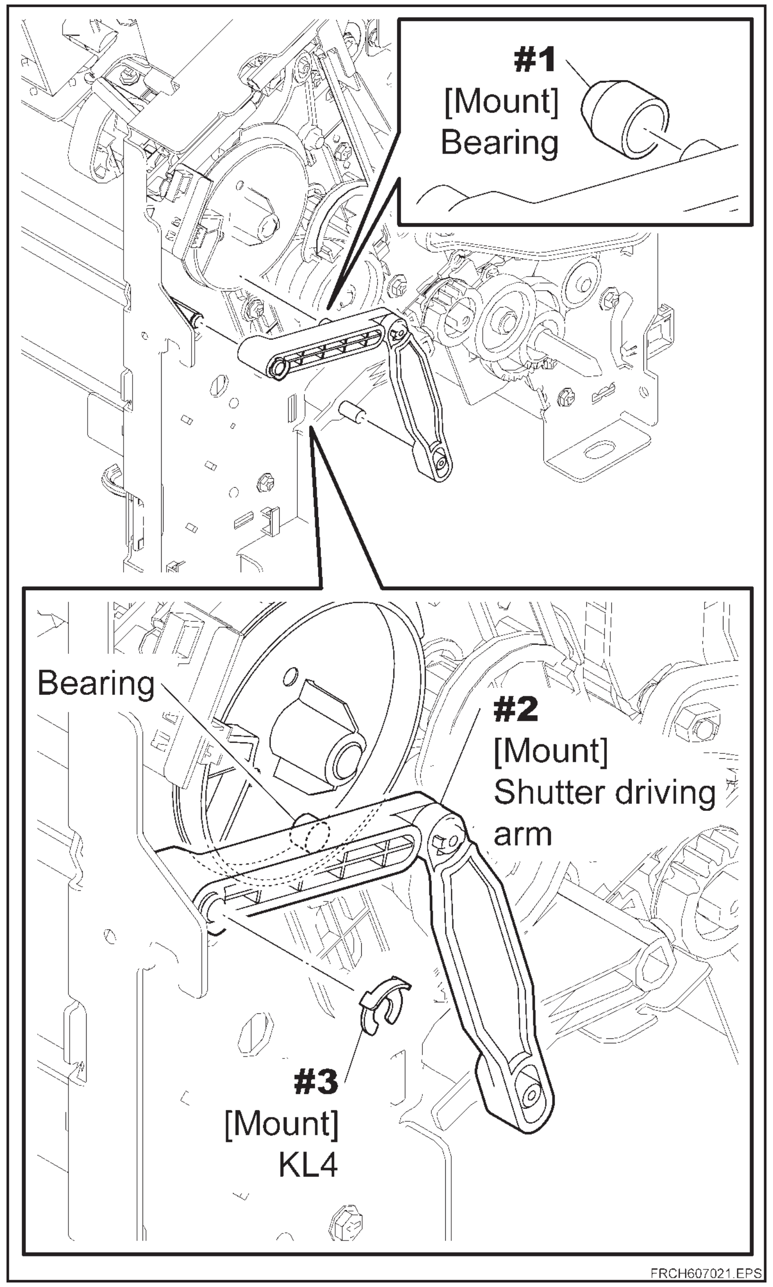
The dumpers on the reference side and the opposite reference side are different in color. Put on the dumper with a light gray barrel on the reference side.


Light gray
[Replace]
Dumper
Screw
(TP3x6)
FRCH607020.EPS

9. **Install the bearing inside the shutter driving arm. Then mount the shutter driving arm and the KL clip.**

◆ NOTES ◆

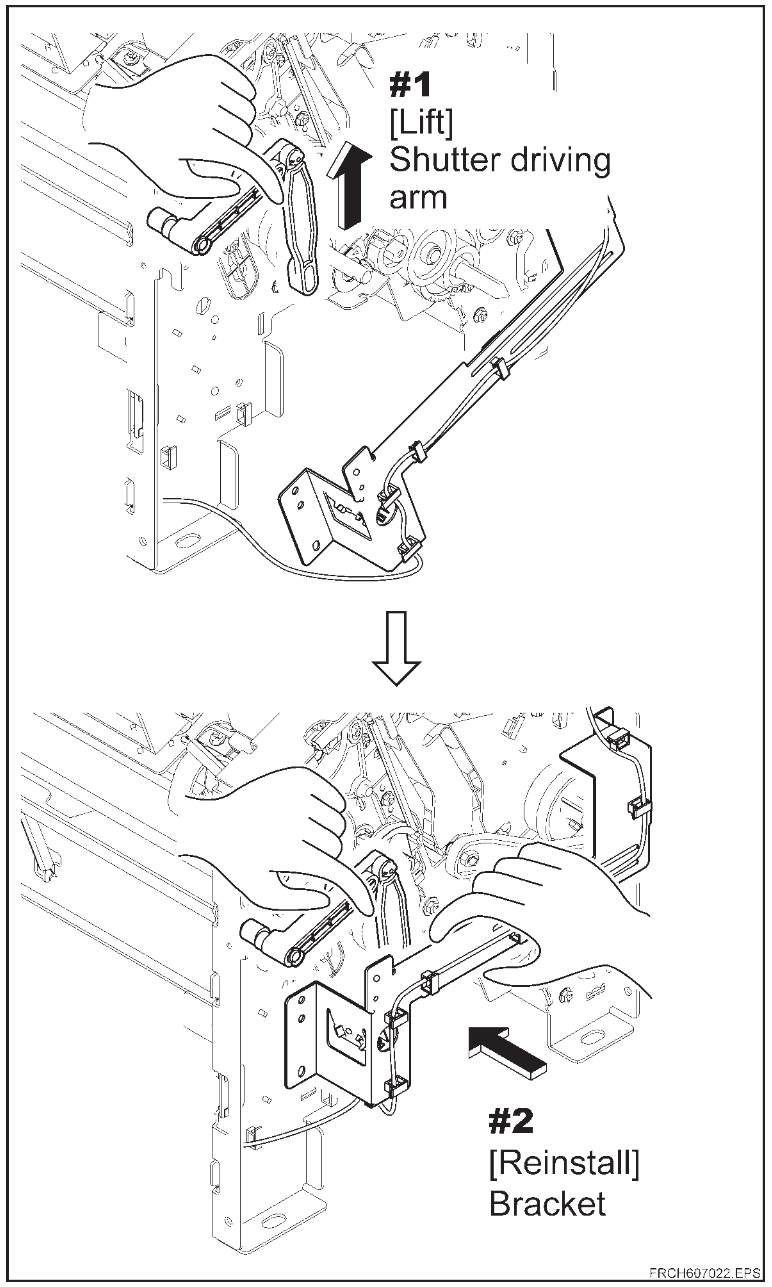
- *Pay attention to the orientation of mounting the bearing.*
- *Mount the shutter driving arm and the bearing in place referring to the figure.*


#1
[Mount]
Bearing
Bearing
#2
[Mount]
Shutter driving
arm
#3
[Mount]
KL4
FRCH607021.EPS

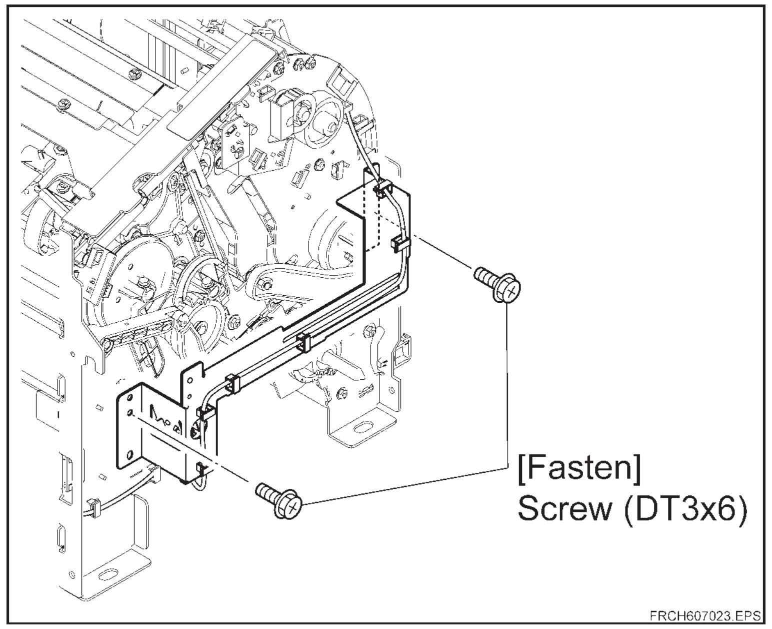
10. Reinstall the bracket while lifting up the shutter driving arm.

◆ NOTE ◆

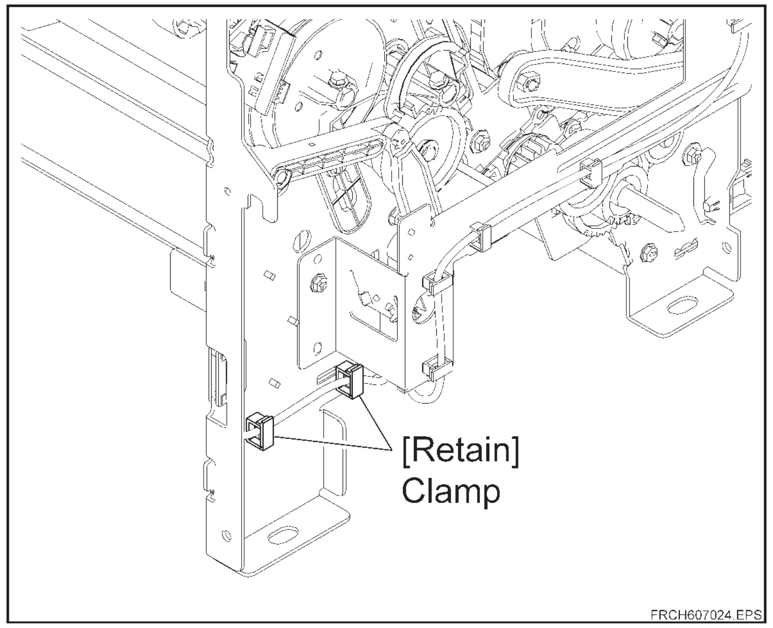
Always install the bracket with the shutter driving arm lifted up. Otherwise, the sensor installed on the bracket might interfere with the shutter driving arm, resulting in the damage of the sensor.


#1
[Lift]
Shutter driving arm
#2
[Reinstall]
Bracket
FRCH607022.EPS

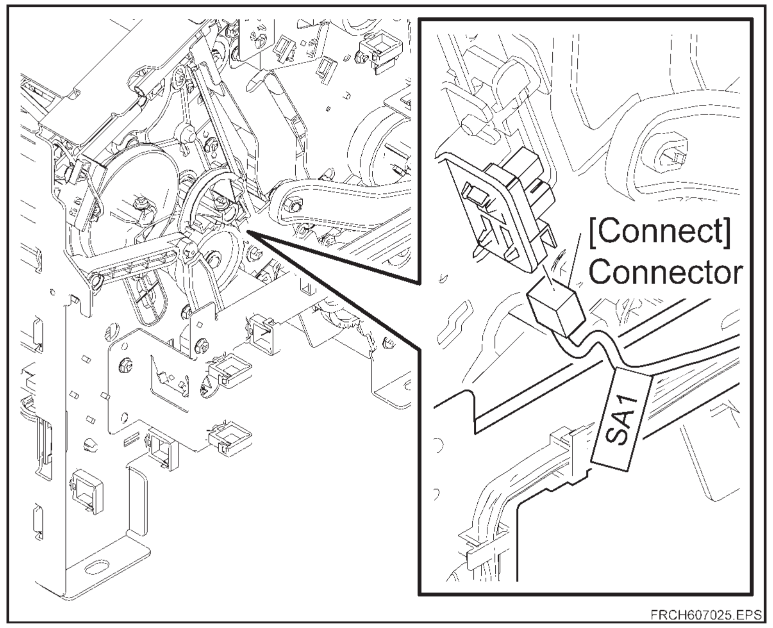
11. Reinstall the screws.


[Fasten]
Screw (DT3x6)
FRCH607023.EPS

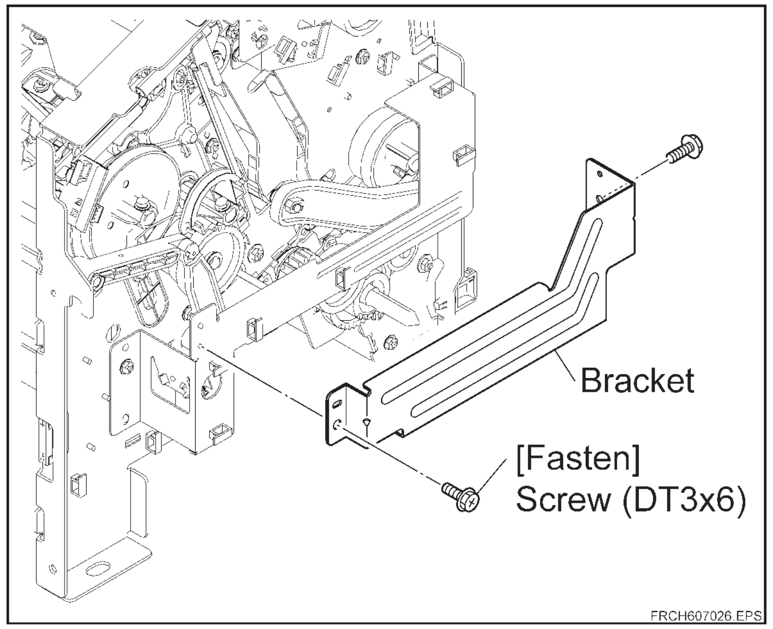
12. Retain the cable with the clamp.


[Retain]
Clamp
FRCH607024.EPS

13. Connect the connector.

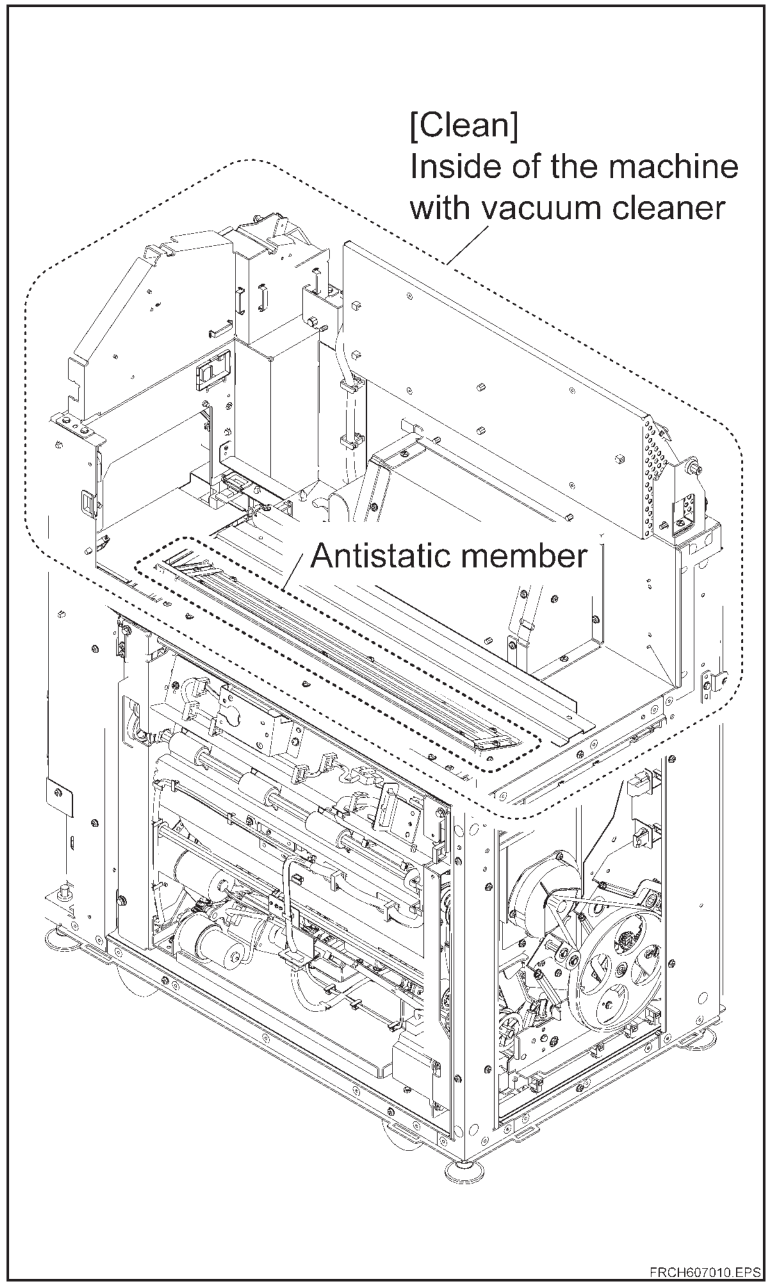

[Connect]
Connector
SA1
FRCH607025.EPS

14. Reinstall the bracket.


Bracket
[Fasten]
Screw (DT3x6)
FRCH607026.EPS

7.12 Cleaning inside the Machine and the Antistatic Member

1. **Clean the inside of the machine and the antistatic member with a vacuum cleaner to remove dust entering from the outside of the machine.**


[Clean]
Inside of the machine
with vacuum cleaner
Antistatic member
FRCH607010.EPS

7.13 Reinstalling the Cassette Set Unit

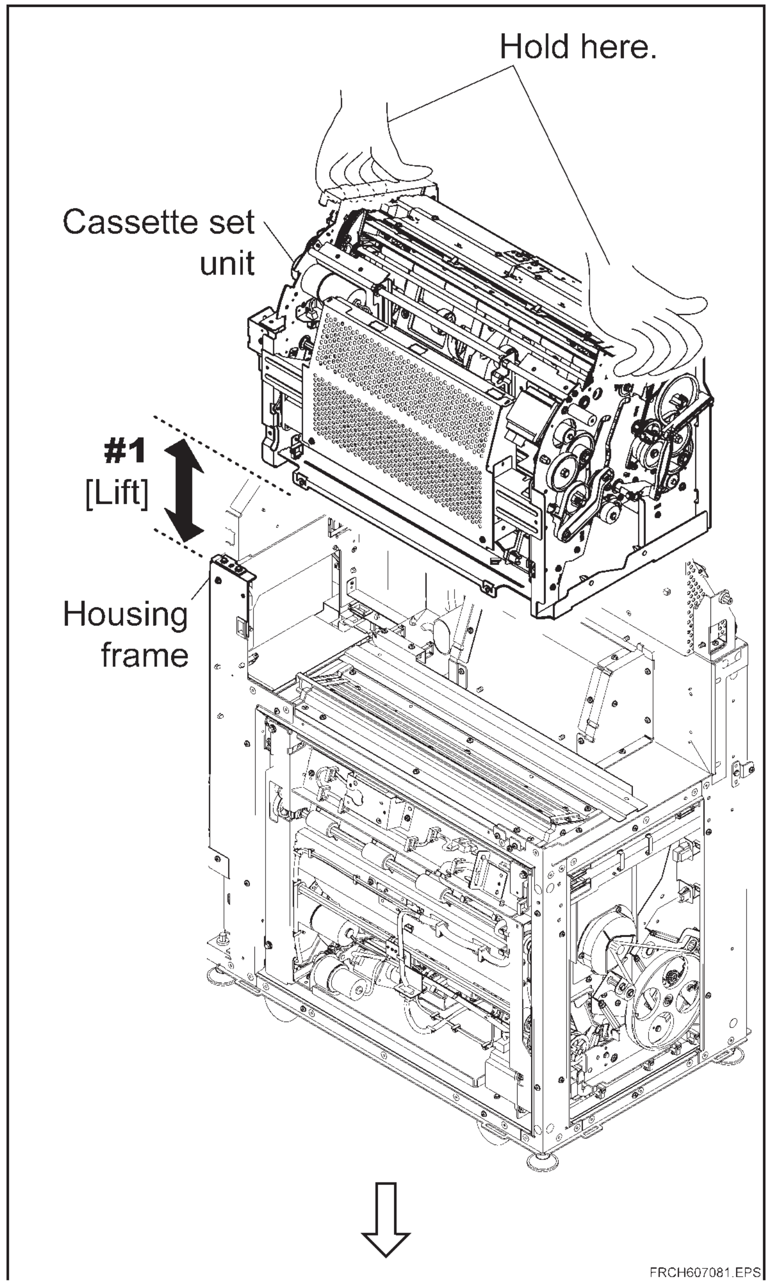
◆ *NOTE* ◆

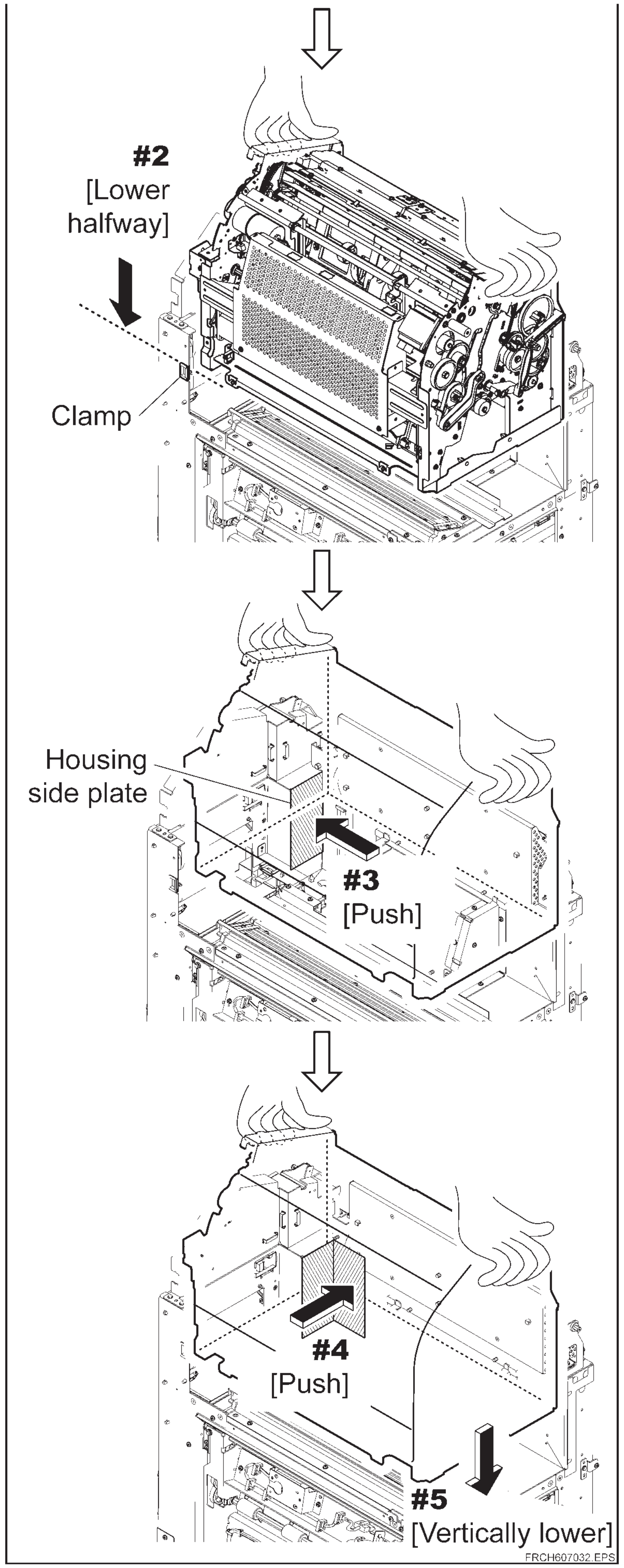
Since the cassette set unit is a heavy object, be careful about the following points when removing, reinstalling and moving.
- Secure a sufficient working space before the operation.
- Hold the position where the “Hold here” label is applied.
- Lift the unit in a natural posture.

1. Hold the cassette set unit on the positions indicated in the figure. Lift the cassette set unit above the housing frame, and lower it halfway with the housing clamp as a guide. Push the unit against the left-hand and then inner sides of the housing in this order, and vertically lower the unit for reinstallation.

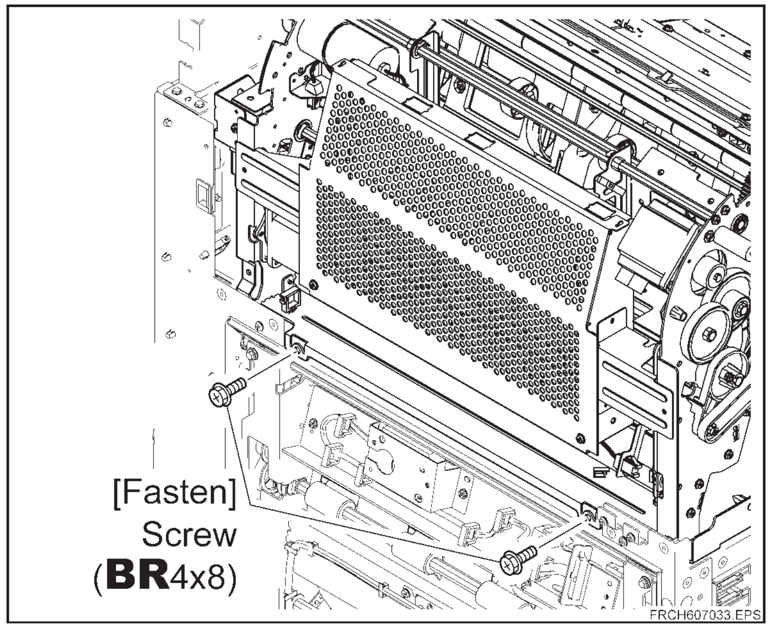
◆ *NOTES* ◆

- *Always lift the cassette set unit above the housing frame before reinstalling. If the cassette set unit has not been lifted high enough, the unit might come into contact with the housing, causing the damage.*
- *Be sure to push the unit against the left-hand and then inner side of the housing in this order. Otherwise, the cassette set unit cannot be reinstalled in place, and the housing cable might get damaged.*

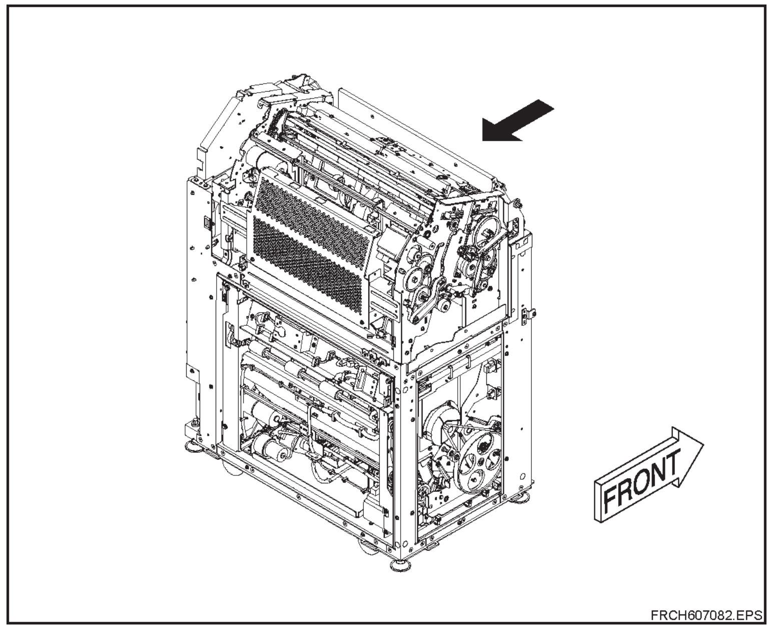

Hold here.
Cassette set unit
#1
[Lift]
Housing frame
FRCH607081.EPS


#2
[Lower halfway]
Clamp
Housing side plate
#3
[Push]
#4
[Push]
#5
[Vertically lower]
FRCH607032.EPS

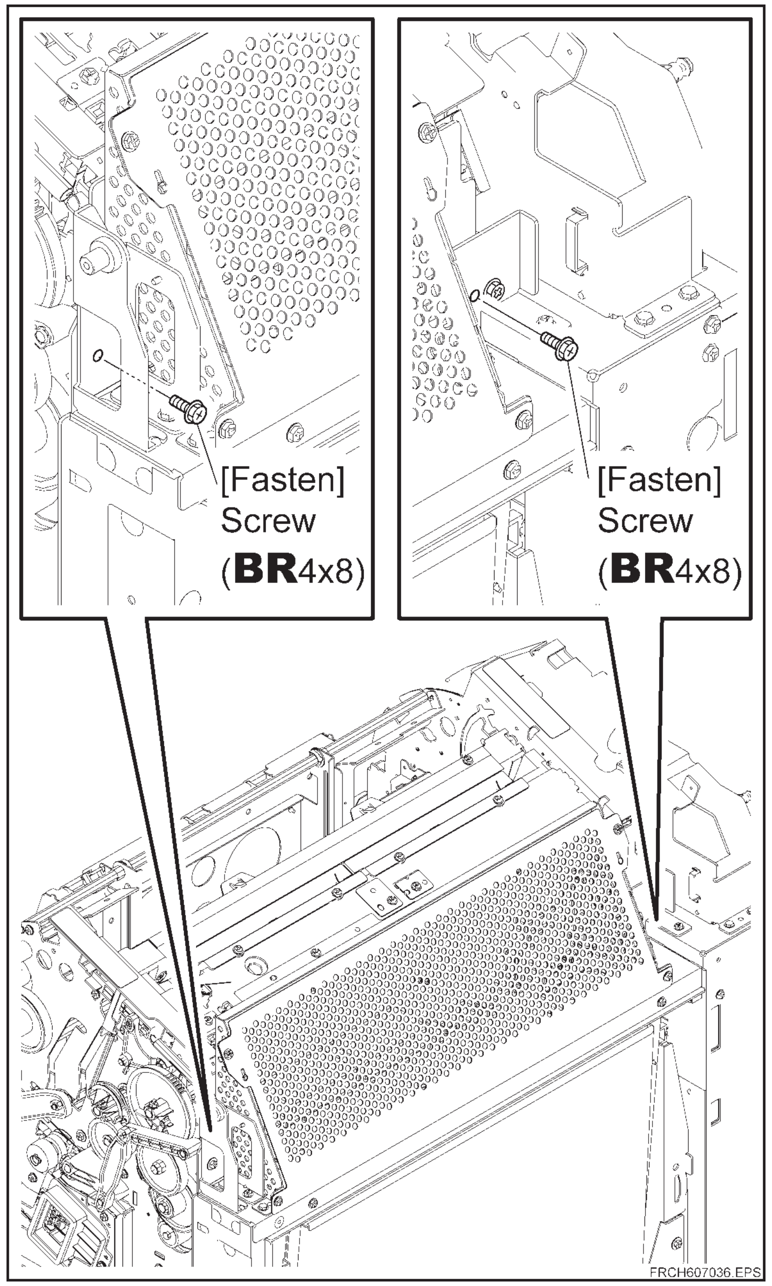
2. **Reinstall the retaining screws of the cassette set unit.**


[Fasten]
Screw
(**BR**4x8)
FRCH607033.EPS

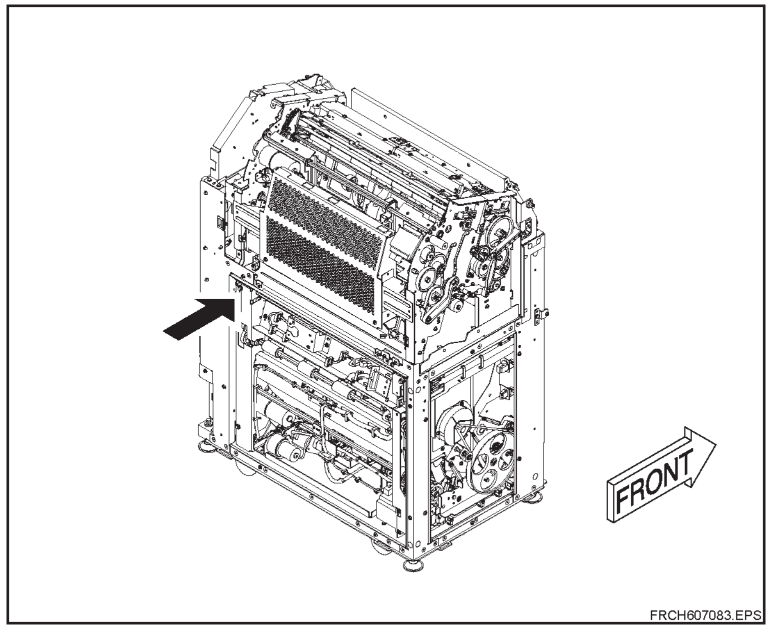
3. **Take the procedure 4 from the direction indicated by the arrow in the figure.**


FRONT
FRCH607082.EPS

4. **Reinstall the retaining screws of the cassette set unit.**


[Fasten]
Screw
(**BR**4x8)
[Fasten]
Screw
(**BR**4x8)
FRCH607036.EPS

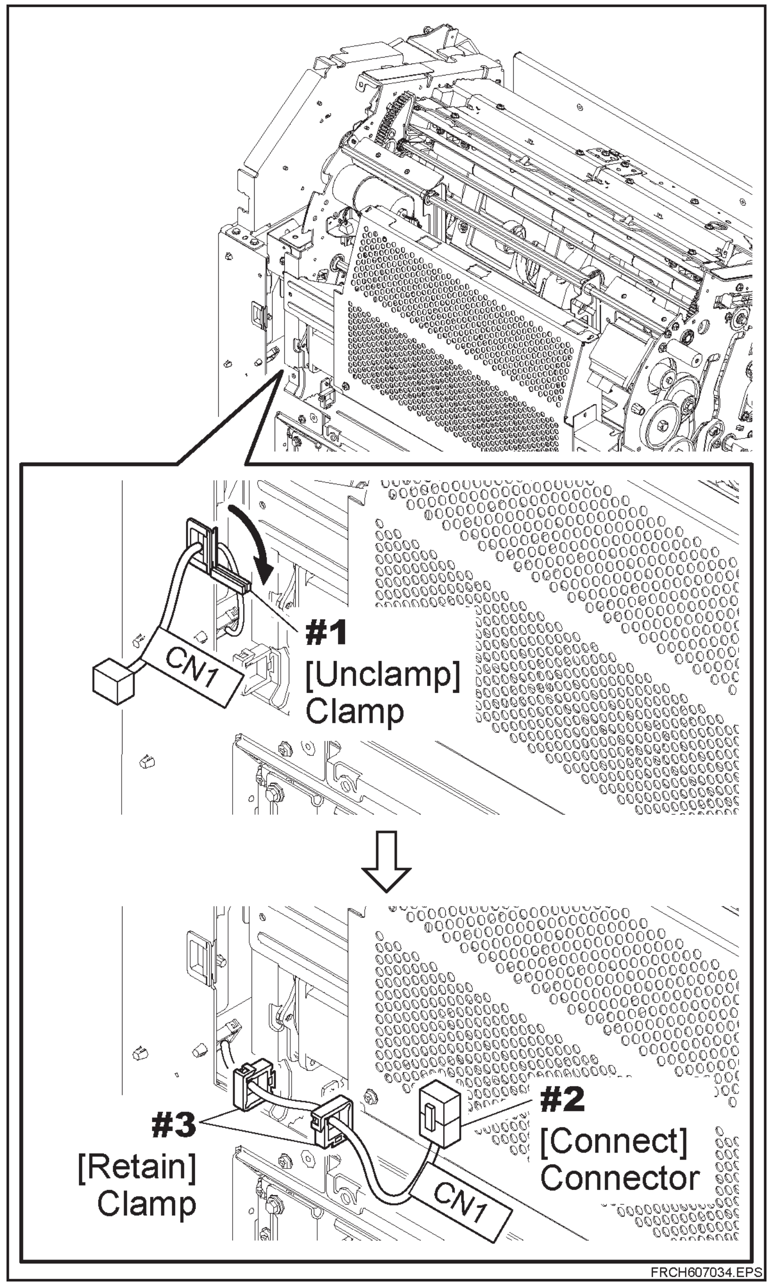
5. **Take the procedures 6 and 7 from the direction indicated by the arrow in the figure.**


FRONT
FRCH607083.EPS

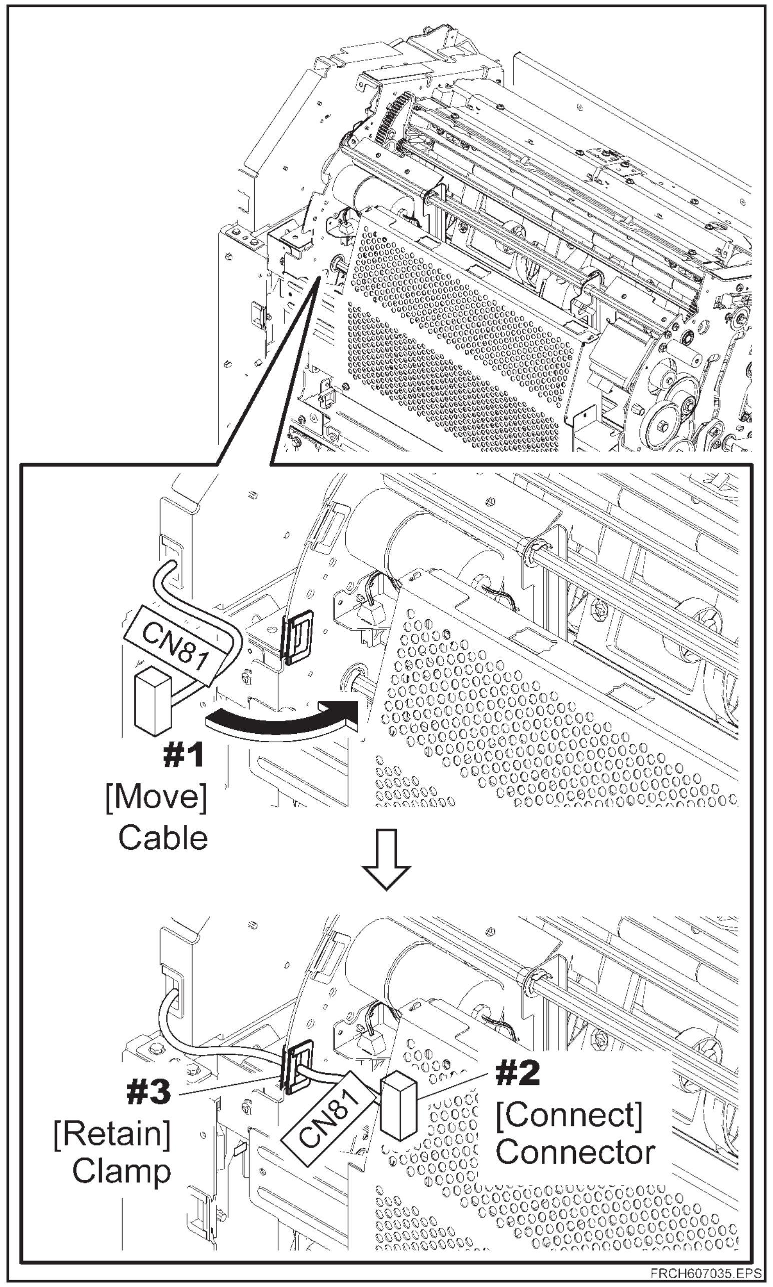
6. **Unclamp the clamp, connect the connector, and retain the cable with the clamp.**

◆ **NOTE** ◆

As the working space is small, exercise care not to get injured by peripheral components when connecting the connector.

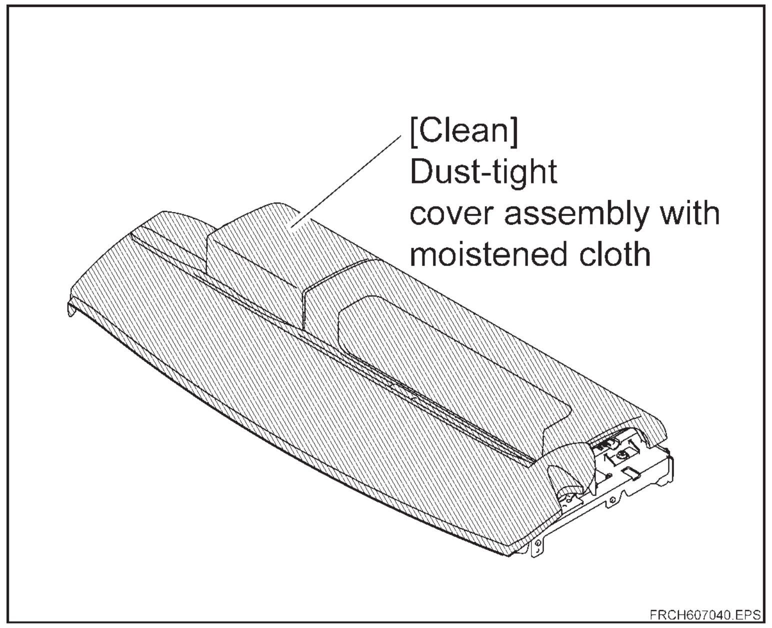

CN1
#1
[Unclamp]
Clamp
#3
[Retain]
Clamp
#2
[Connect]
Connector
CN1
FRCH607034.EPS

7. **Connect the connector, and retain the cable with the clamp.**

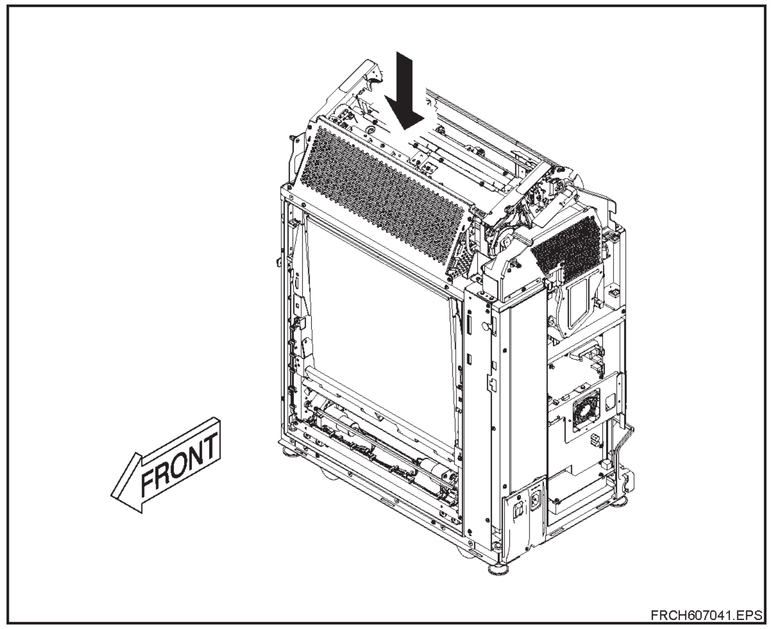

CN81
#1
[Move]
Cable
#3
[Retain]
Clamp
CN81
#2
[Connect]
Connector
FRCH607035.EPS

7.14 Cleaning the Dust-Tight Cover Assembly

1. **Clean the dust-tight cover assembly with a moistened cloth.**


[Clean]
Dust-tight
cover assembly with
moistened cloth
FRCH607040.EPS

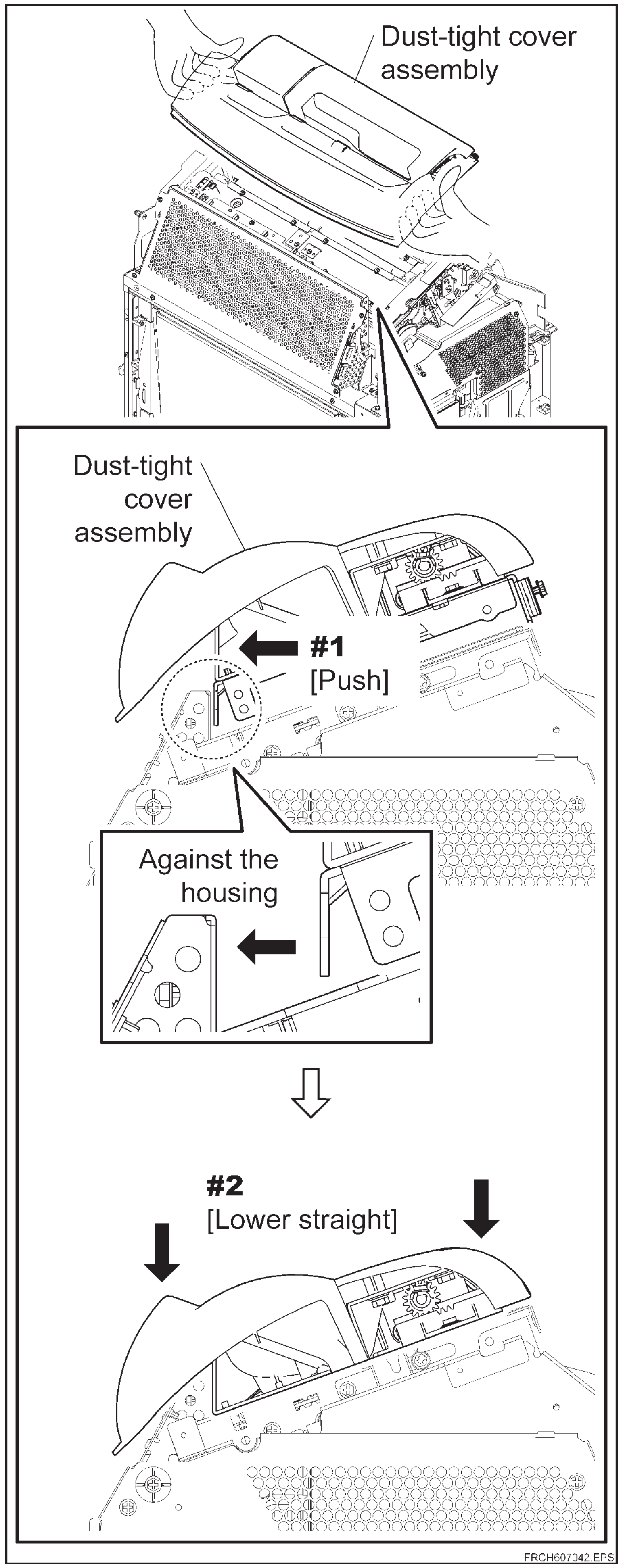
2. **Take the procedure 3 from the direction indicated by the arrow in the figure.**


FRONT
FRCH607041.EPS

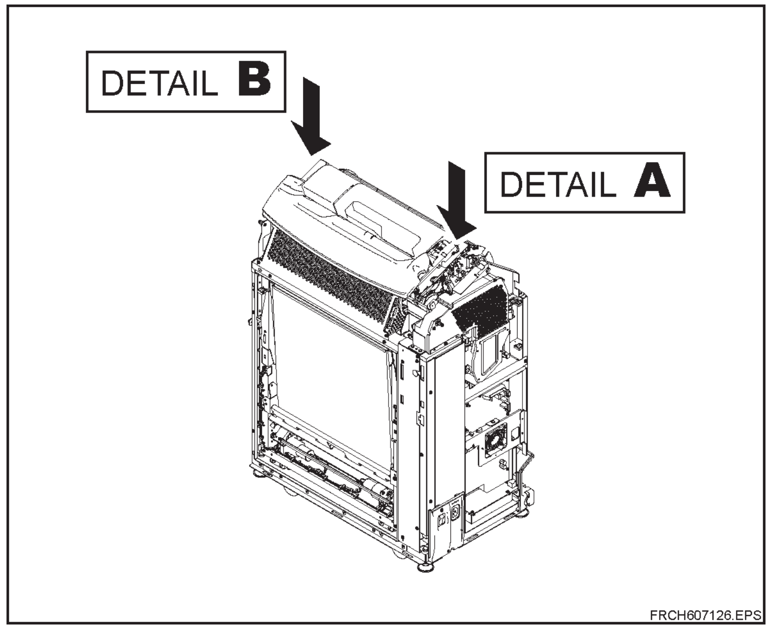
3. **Hold the dust-tight cover assembly on the positions indicated in the figure, and push the assembly against the housing. Lower the assembly straight down not to tilt it and reinstall.**

◆ NOTE ◆

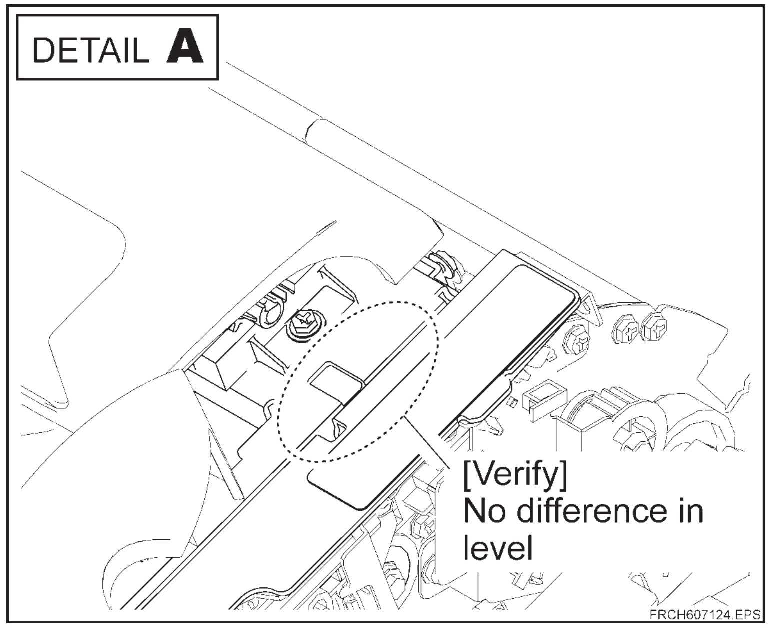
Be sure to lower the dust-tight cover assembly straight down without tilting it, and reinstall. Otherwise, the sensor or the gear might get damaged.


Dust-tight cover assembly
Dust-tight cover assembly
#1
[Push]
Against the housing
#2
[Lower straight]
FRCH607042.EPS

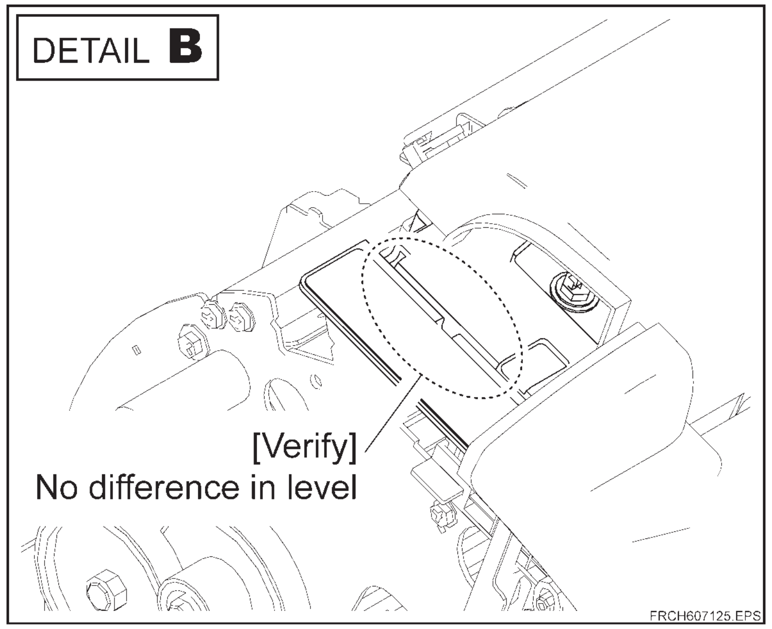
4. Take the procedures 5 and 6 from the direction indicated by the arrow in the figure.


DETAIL B
DETAIL A
FRCH607126.EPS

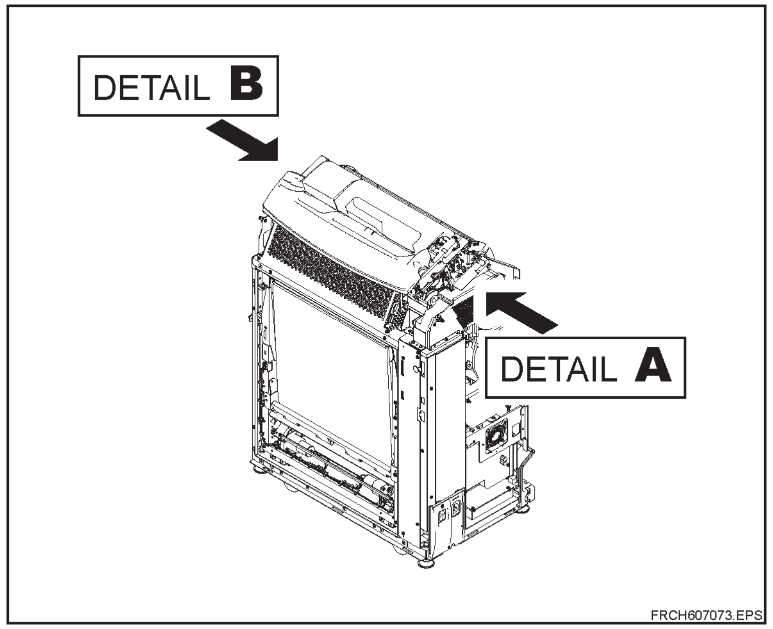
5. Check to make sure that there is no difference in level between the dust-tight cover assembly and the side plate of the cassette set unit from the direction instructed in DETAIL A.


DETAIL A
[Verify]
No difference in level
FRCH607124.EPS

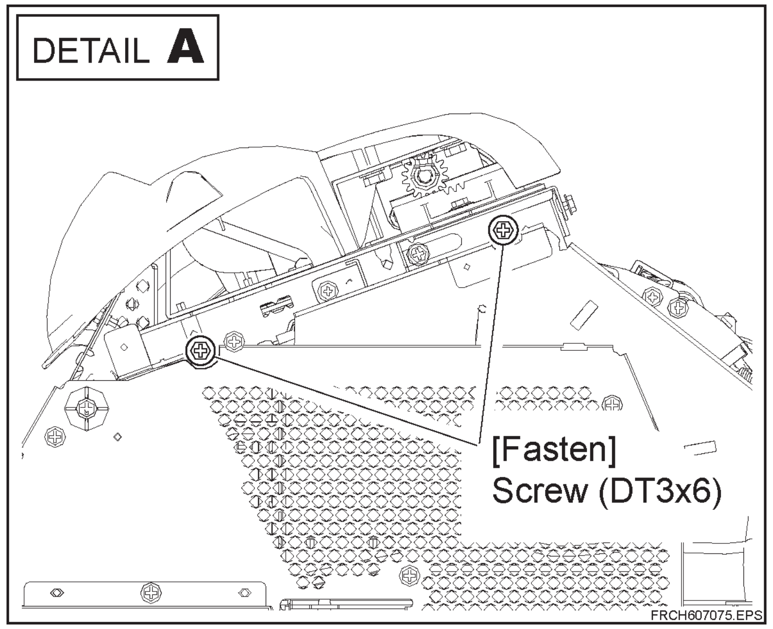
6. Check to make sure that there is no difference in level between the dust-tight cover assembly and the side plate of the cassette set unit from the direction instructed in DETAIL B.


DETAIL B
[Verify]
No difference in level
FRCH607125.EPS

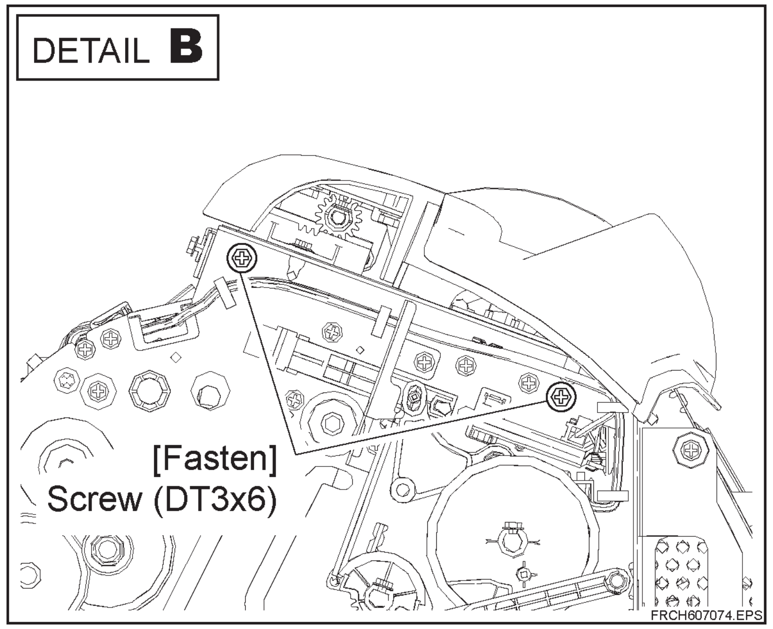
7. Take the procedures 8 and 9 from the direction indicated by the arrow in the figure.


DETAIL B
DETAIL A
FRCH607073.EPS

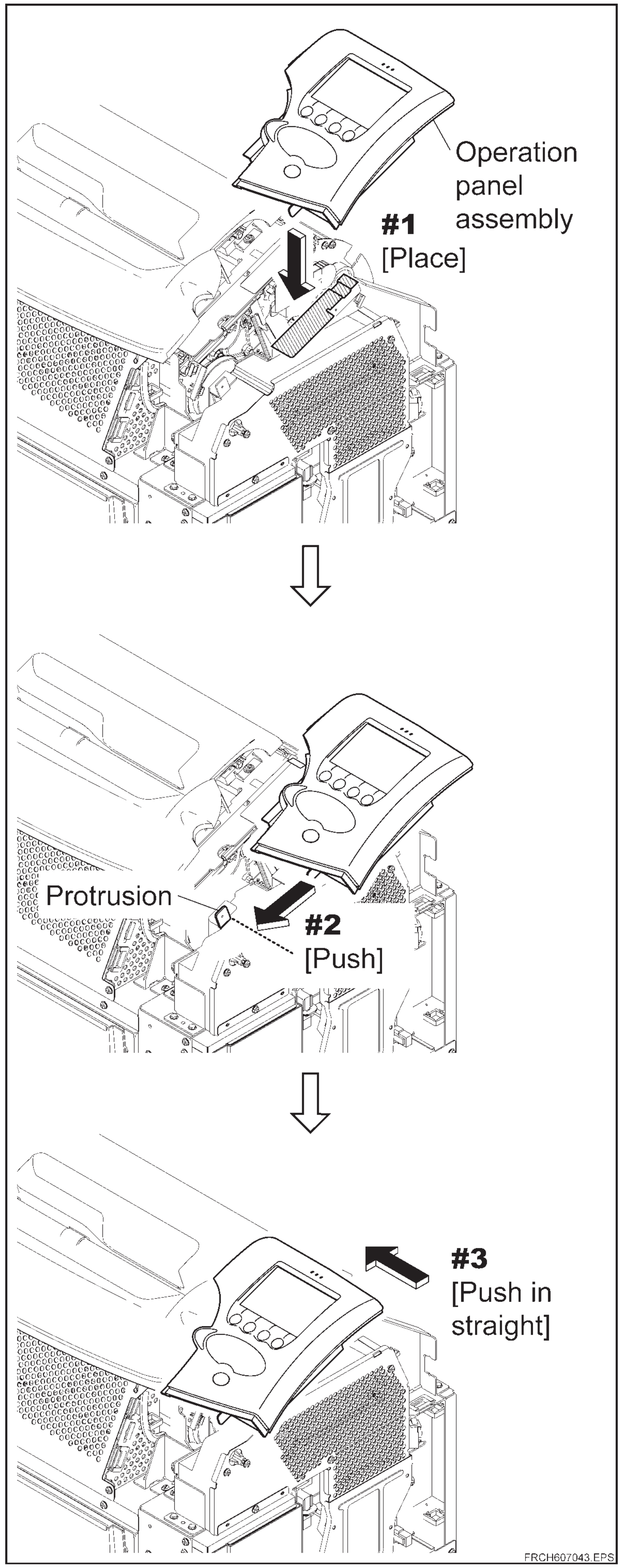
8. Reinstall the retaining screws of the dust-tight cover assembly from the direction instructed in DETAIL A.


DETAIL A
[Fasten]
Screw (DT3x6)
FRCH607075.EPS

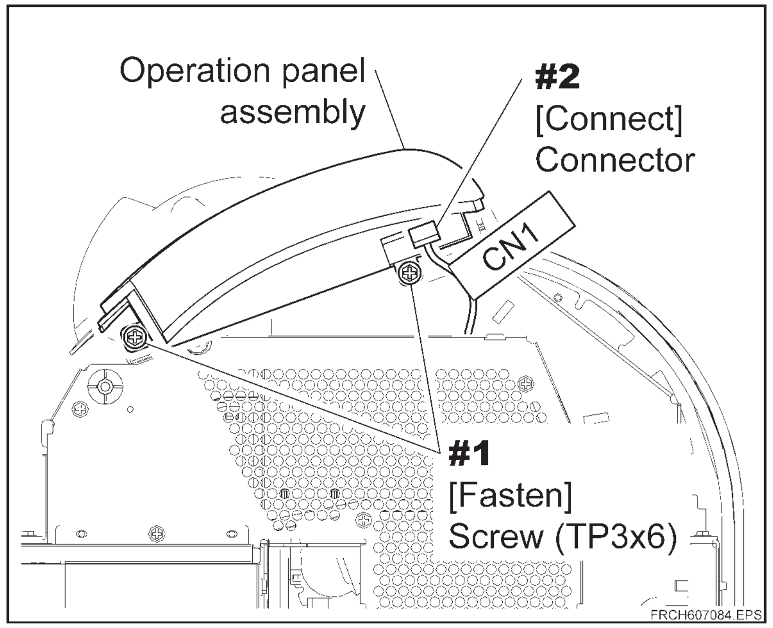
9. Reinstall the retaining screws of the dust-tight cover assembly from the direction instructed in DETAIL B.


DETAIL B
[Fasten]
Screw (DT3x6)
FRCH607074.EPS

10. **Put the operation panel assembly on the shaded portion in the figure, and push it against the protrusion on the housing. Laterally push the operation panel assembly straight for reinstalling.**

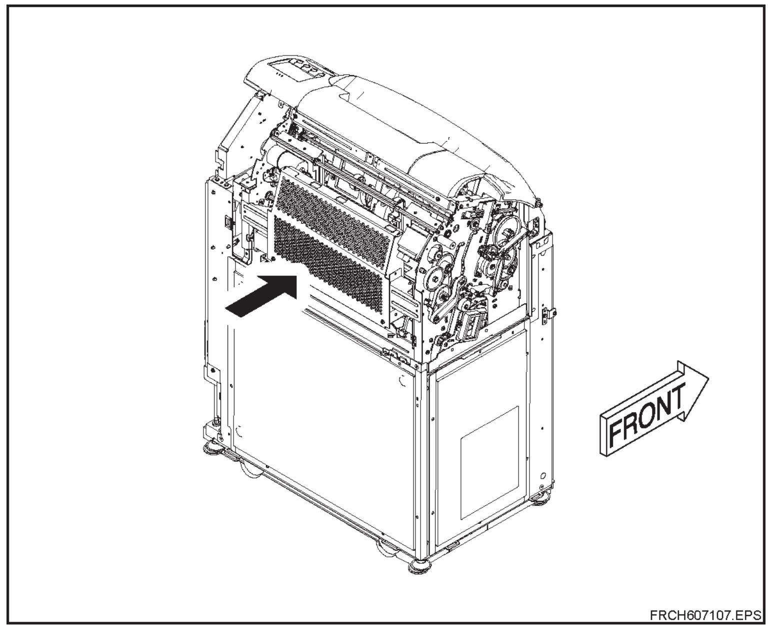

Operation panel assembly
#1
[Place]
Protrusion
#2
[Push]
#3
[Push in straight]
FRCH607043.EPS

11. **Reinstall the retaining screws of the operation panel assembly, and connect the connector.**

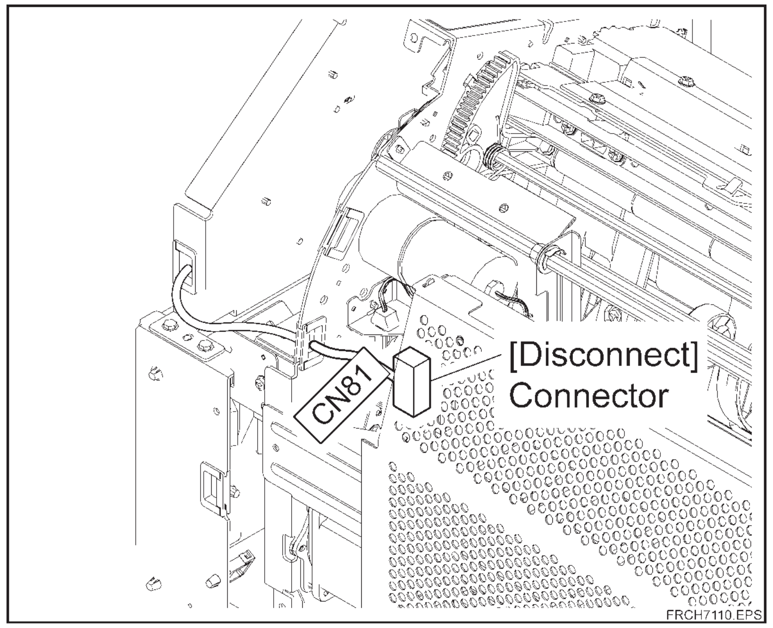

Operation panel assembly
#2
[Connect]
Connector
CN1
#1
[Fasten]
Screw (TP3x6)
FRCH607084.EPS

7.15 Replacing the IP Suction Pump

1. **Take the procedures from 2 to 5 from the direction indicated by the arrow in the figure.**


FRONT
FRCH607107.EPS

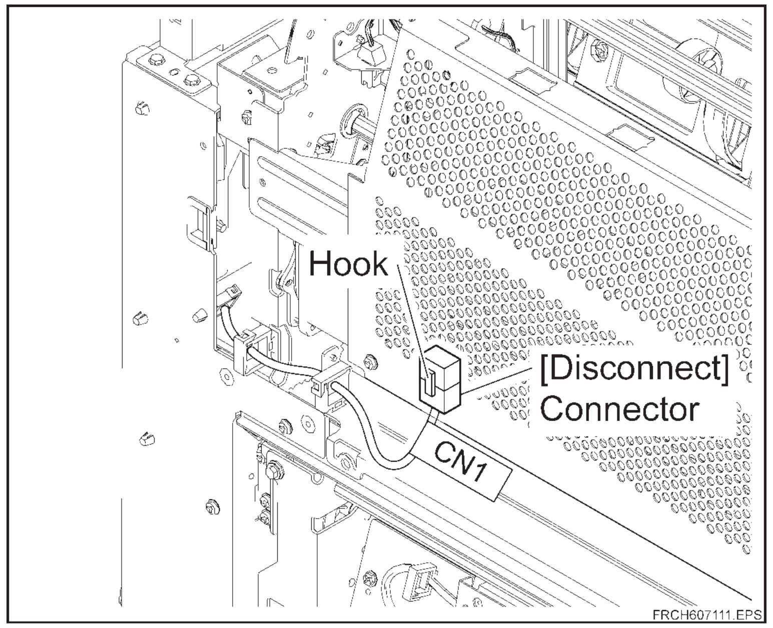
2. **Disconnect the connector.**


CN81
[Disconnect]
Connector
FRCH7110.EPS

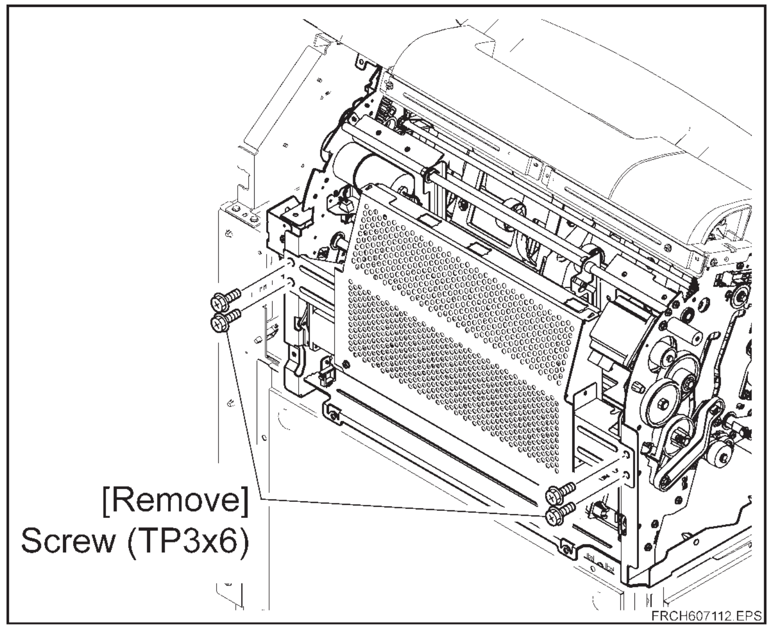
3. **Disconnect the connector while pushing the hook of the connector.**

◆ **NOTE** ◆

As the working space is small, exercise care not to get injured by peripheral components when disconnecting the connector.


Hook
[Disconnect]
Connector
CN1
FRCH607111.EPS

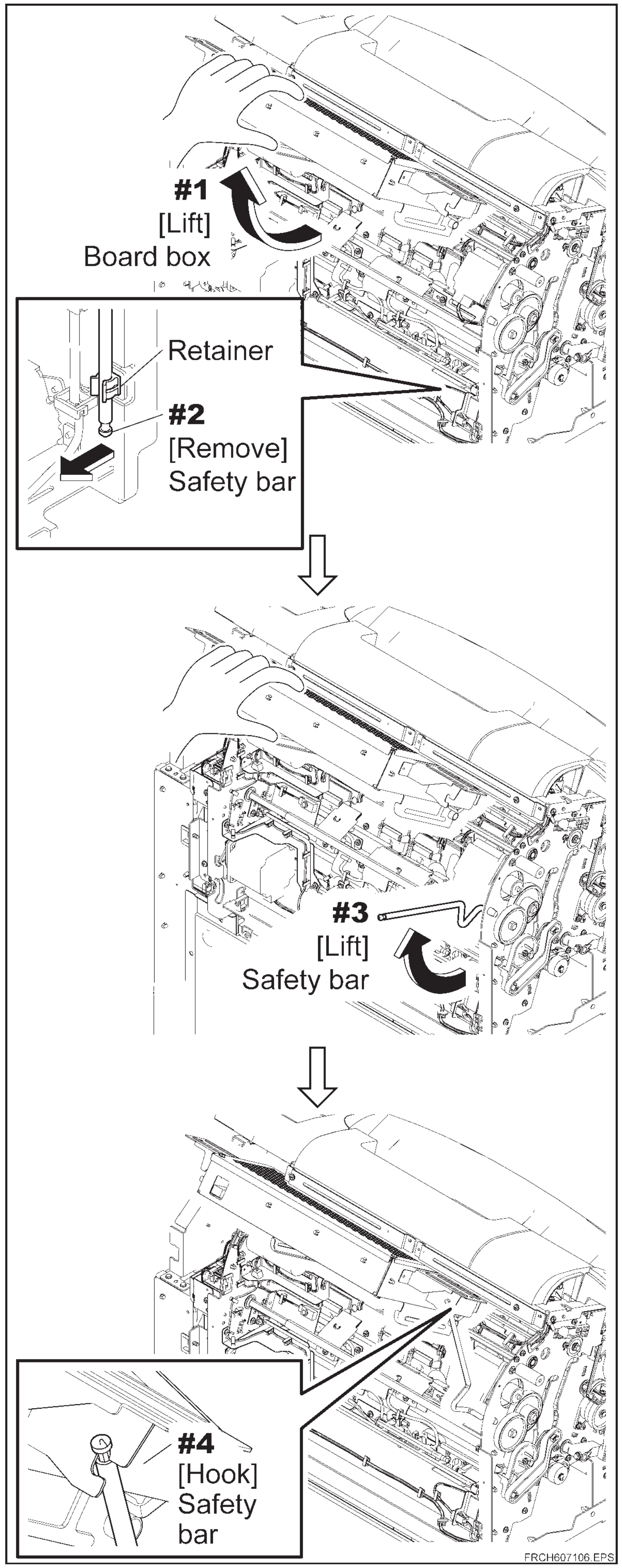
4. **Remove the screws.**


[Remove]
Screw (TP3x6)
FRCH607112.EPS

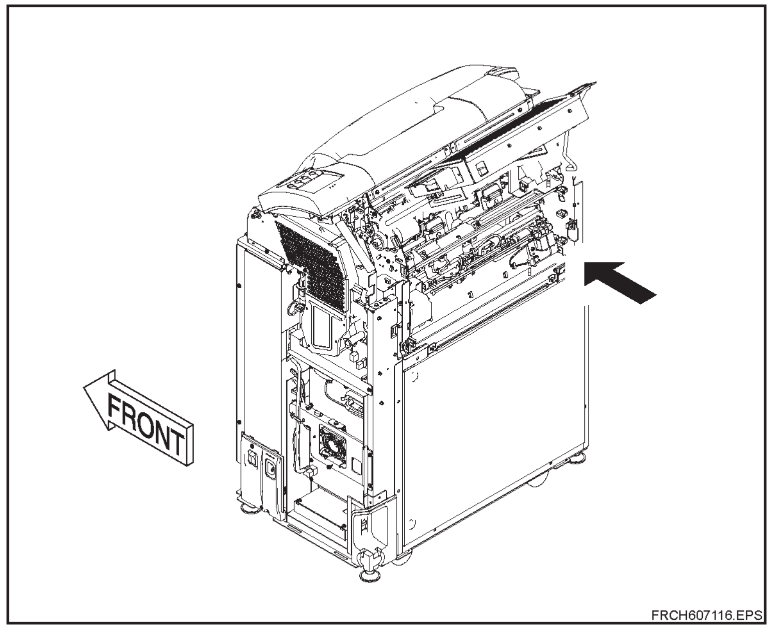
5. **Lift the board box and remove the safety bar from the retainer. Lift the safety bar and hook it on the bracket of the board box.**

◆ NOTE ◆

Be sure to hook the safety bar on the bracket of the board box to prevent the board box from falling down. Otherwise, the board box might fall down, hurting the operator.


#1
[Lift]
Board box
Retainer
#2
[Remove]
Safety bar
#3
[Lift]
Safety bar
#4
[Hook]
Safety
bar
FRCH607106.EPS

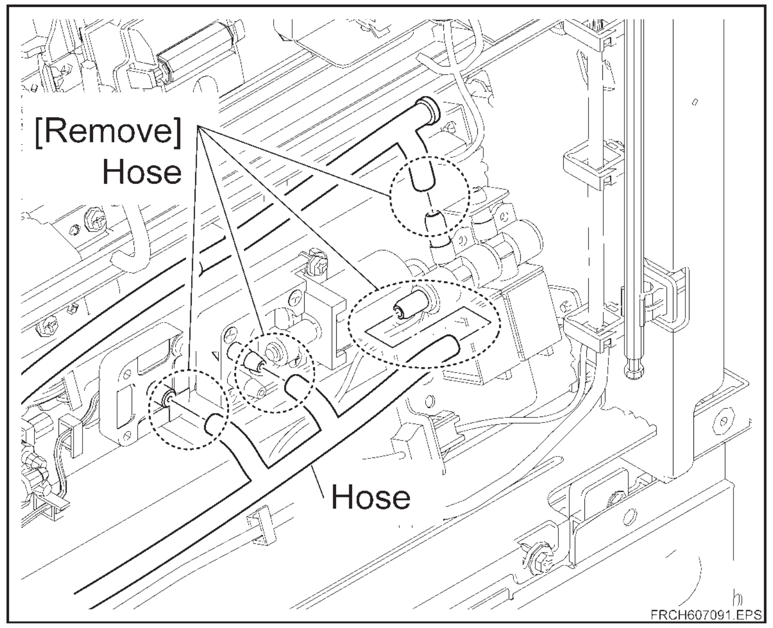
6. **Take the procedures from 7 to 15 from the direction indicated by the arrow in the figure.**


FRONT
FRCH607116.EPS

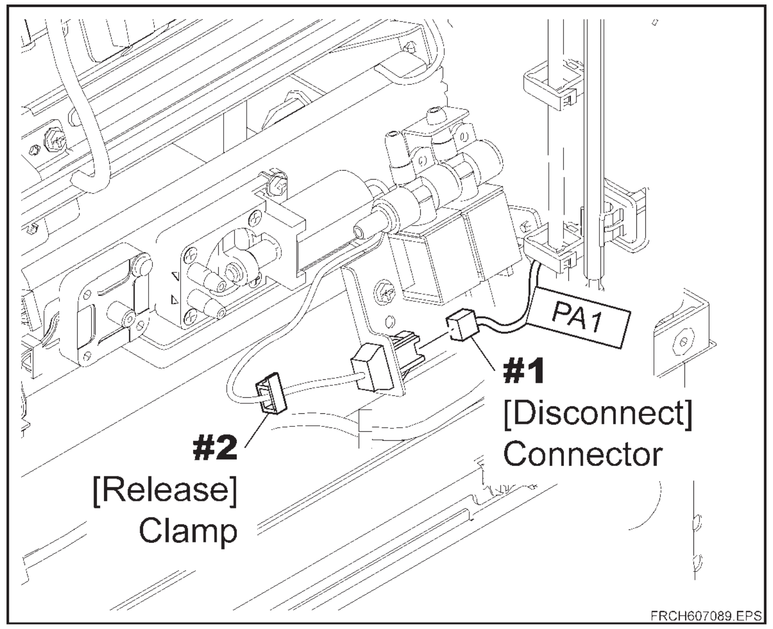
7. **Remove the hose.**

◆ NOTE ◆

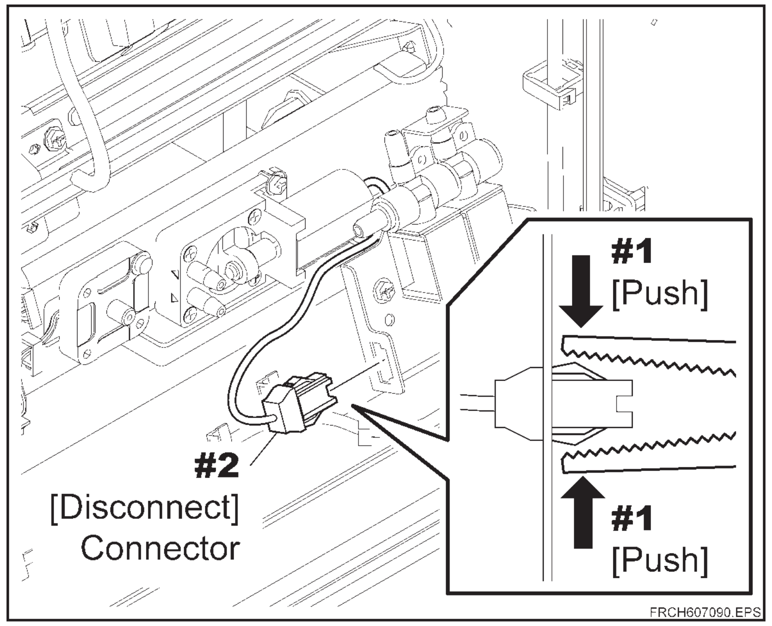
Exercise care not to damage the hose when removing it.


[Remove]
Hose
Hose
FRCH607091.EPS

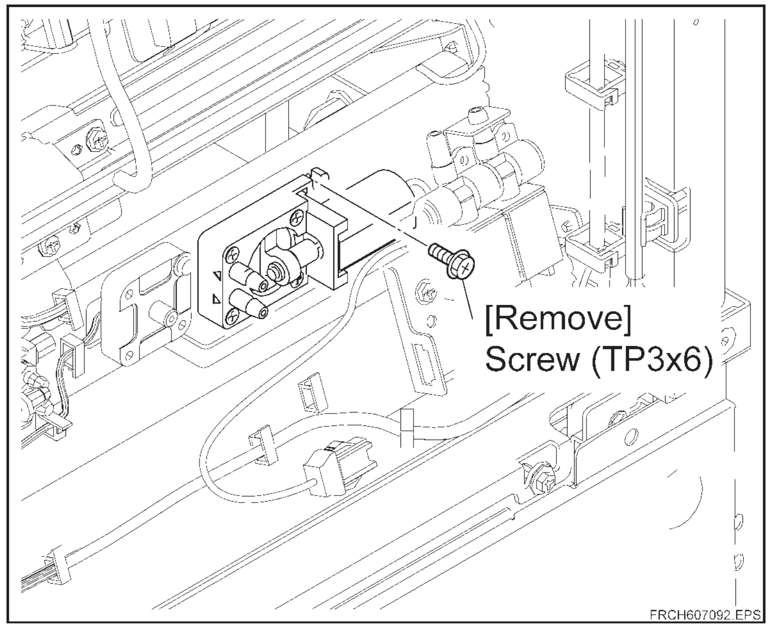
8. **Disconnect the connector, and unclamp the clamp.**


PA1
#1
[Disconnect]
Connector
#2
[Release]
Clamp
FRCH607089.EPS

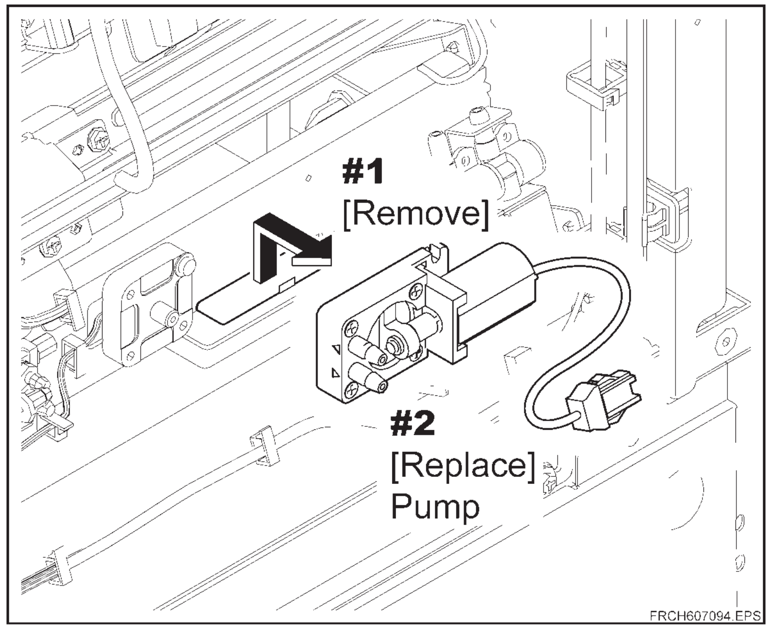
9. **While pushing the hook of the connector with the long-nose pliers, disconnect the connector from the bracket.**


#1
[Push]
#2
[Disconnect]
Connector
#1
[Push]
FRCH607090.EPS

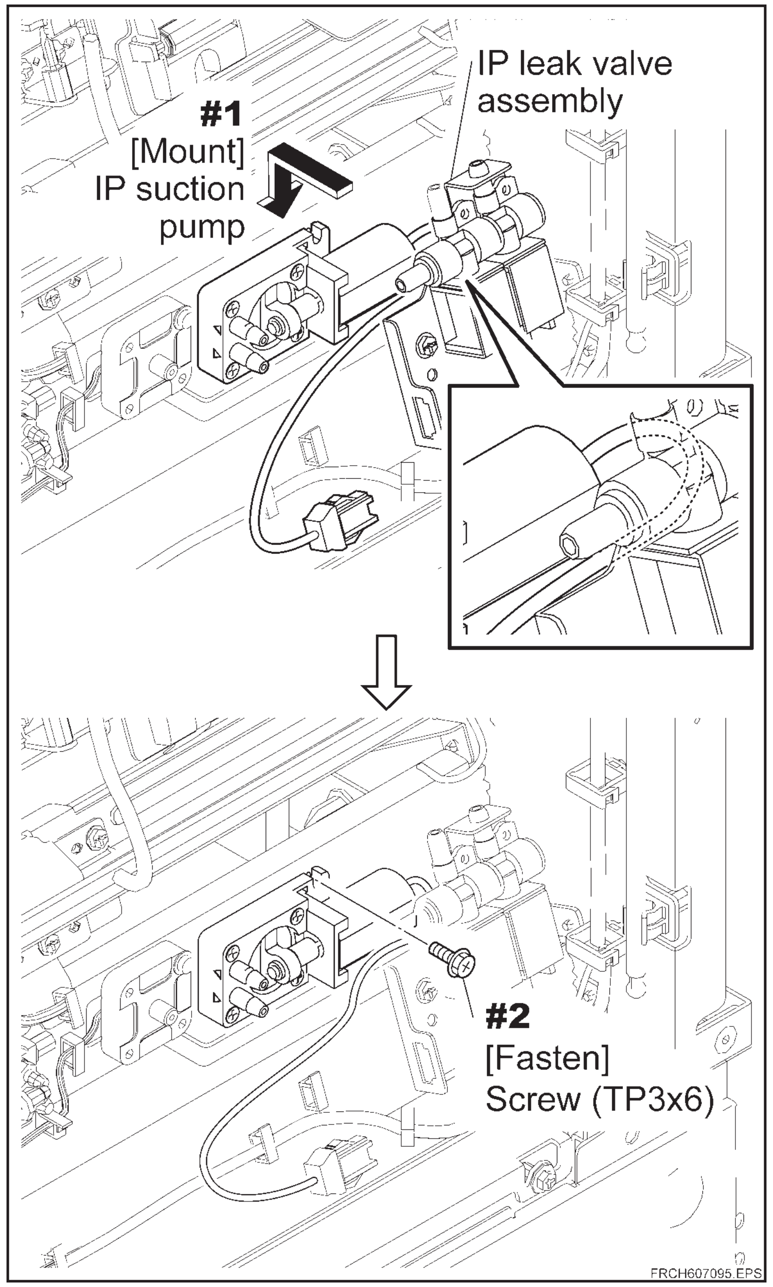
10. **Remove the retaining screw of the IP suction pump.**


[Remove]
Screw (TP3x6)
FRCH607092.EPS

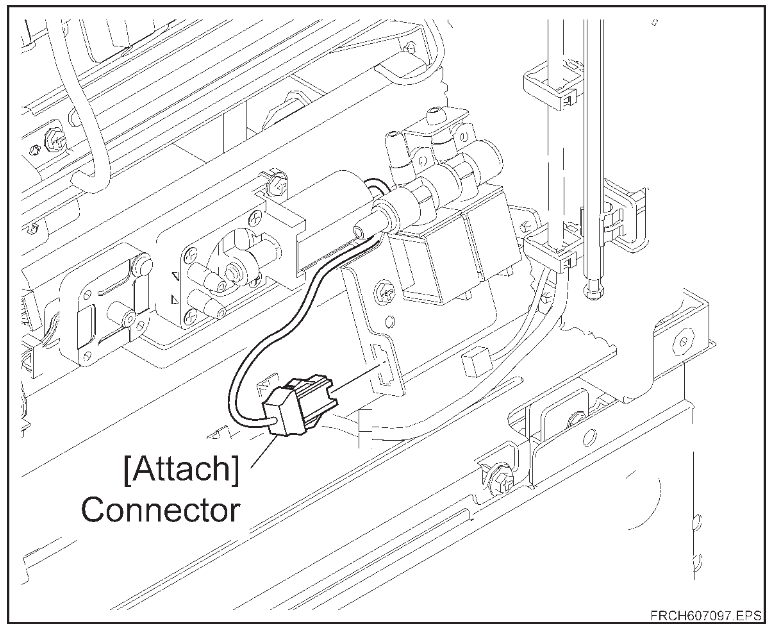
11. **Remove the IP suction pump and replace.**


#1
[Remove]
#2
[Replace]
Pump
FRCH607094.EPS

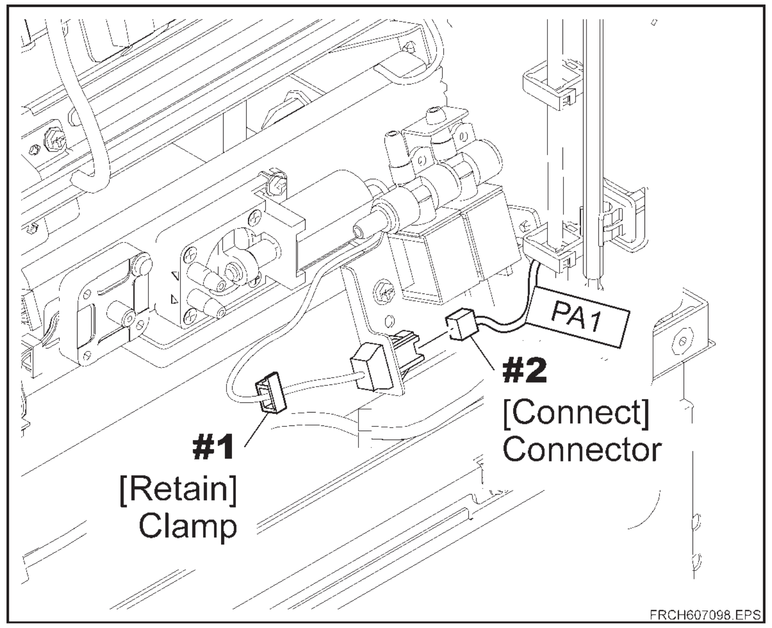
12. **Install the IP suction pump so that the IP suction cable pump is located behind the IP leak valve assembly. Put on the retaining screw of the IP suction pump.**


IP leak valve assembly
#1
[Mount]
IP suction pump
#2
[Fasten]
Screw (TP3x6)
FRCH607095.EPS

13. **Attach the connector to the bracket.**


[Attach]
Connector
FRCH607097.EPS

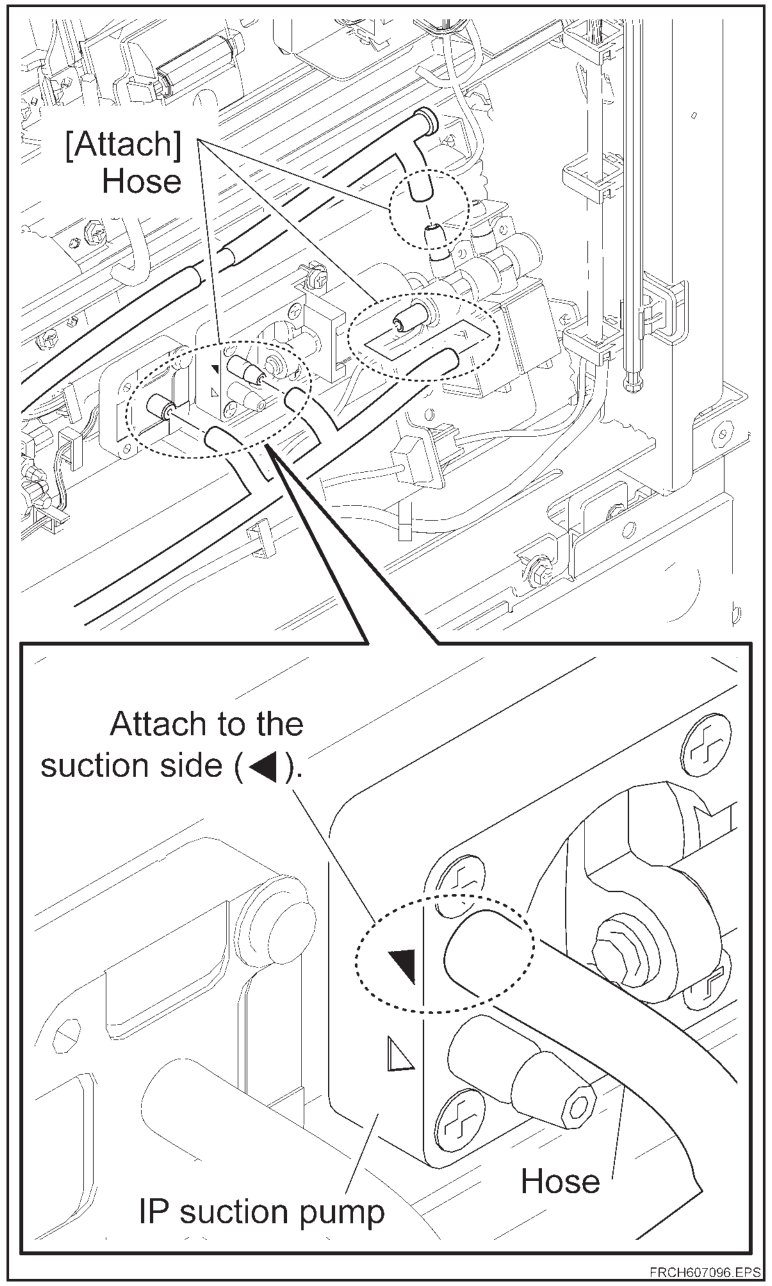
14. **Retain the cable with the clamp, and connect the connector.**


PA1
#2
[Connect]
Connector
#1
[Retain]
Clamp
FRCH607098.EPS

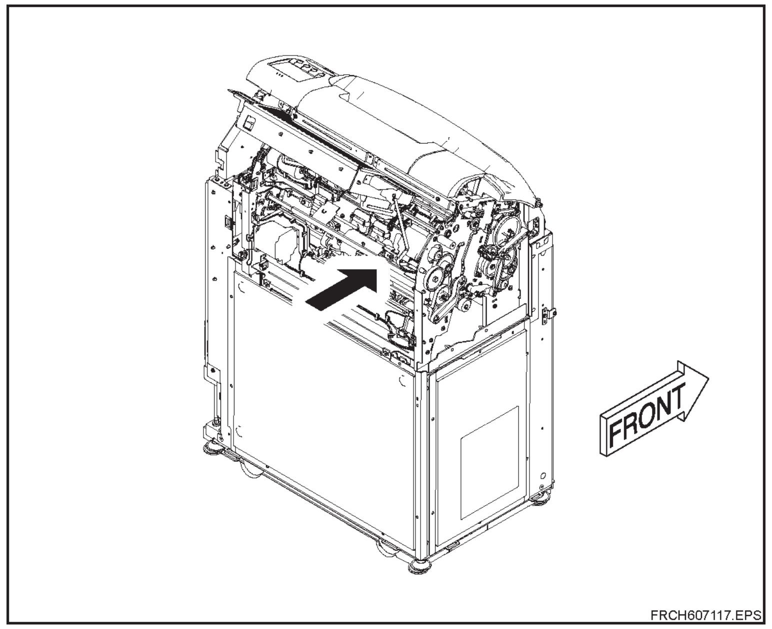
15. **Attach the hose.**

◆ NOTES ◆

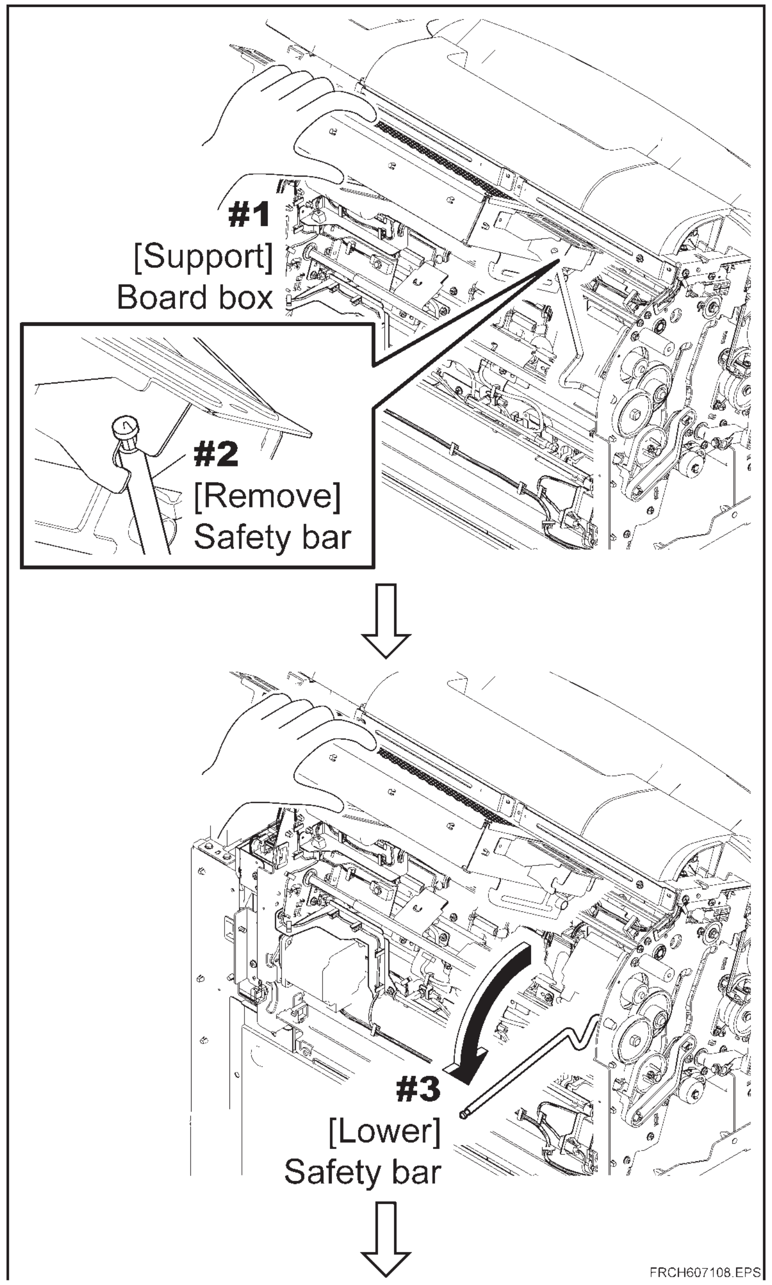
- *Be sure to attach the hose to the suction side of the IP suction pump.*
- *Insert the hose to the innermost region.*

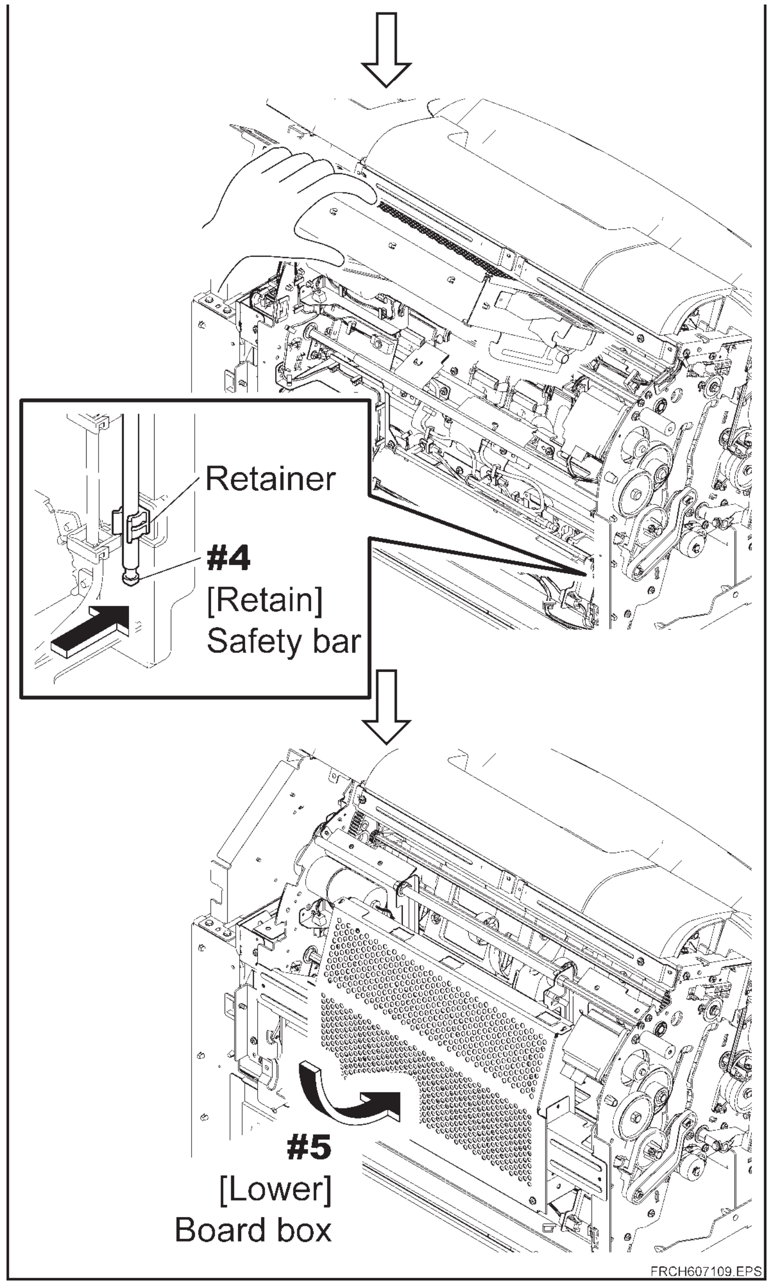

[Attach]
Hose
Attach to the
suction side (◀).
IP suction pump
Hose
FRCH607096.EPS

16. **Take the procedures from 17 to 20 from the direction indicated by the arrow in the figure.**

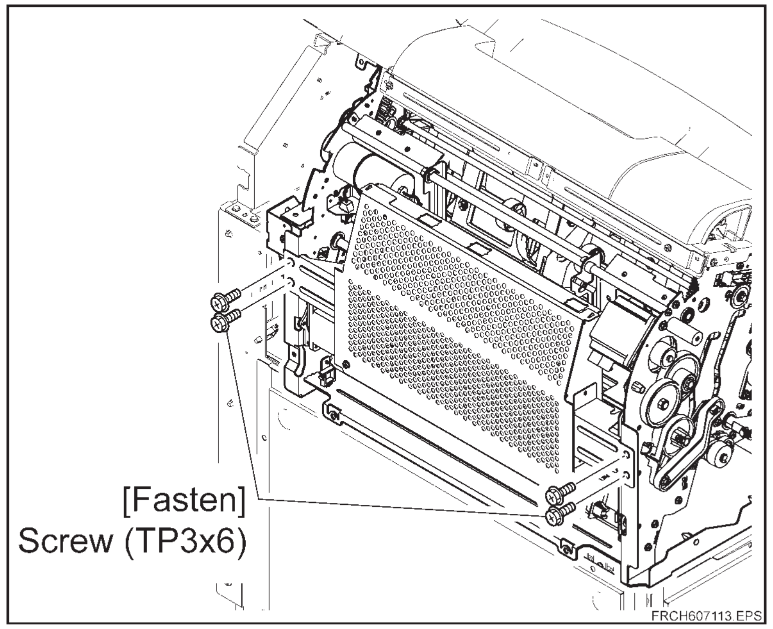

FRONT
FRCH607117.EPS

17. **While holding the position indicated in the figure and supporting the board box, remove the safety bar. Lower the safety bar and fix to the retainer. Then lower the board box.**


#1
[Support]
Board box
#2
[Remove]
Safety bar
#3
[Lower]
Safety bar
FRCH607108.EPS


Retainer
#4
[Retain]
Safety bar
#5
[Lower]
Board box
FRCH607109.EPS

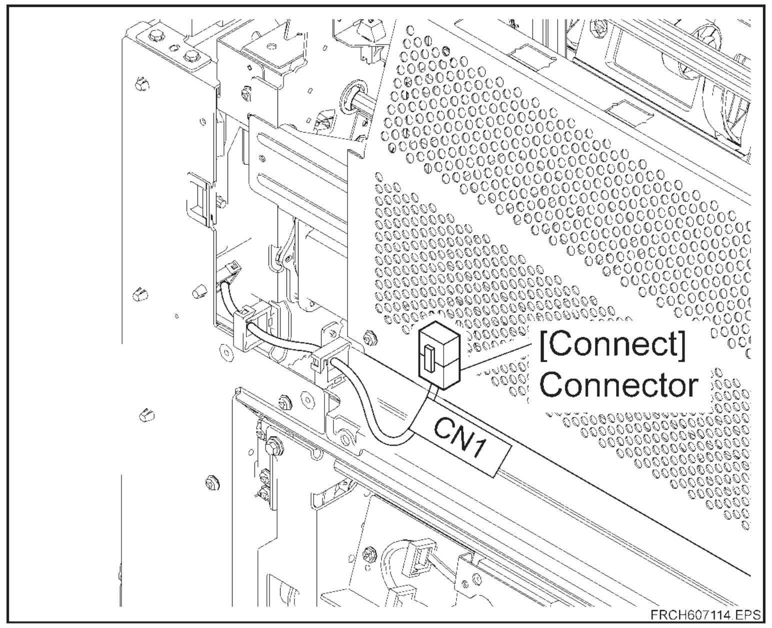
18. **Reinstall the screws.**


[Fasten]
Screw (TP3x6)
FRCH607113.EPS

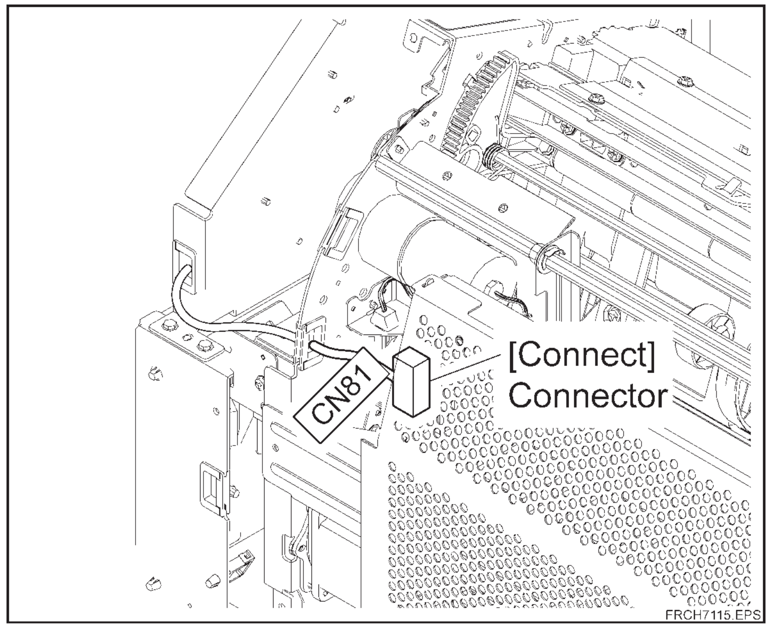
19. **Connect the connector.**

◆ NOTE ◆

As the working space is small, exercise care not to get injured by peripheral components when connecting the connector.


[Connect]
Connector
CN1
FRCH607114.EPS

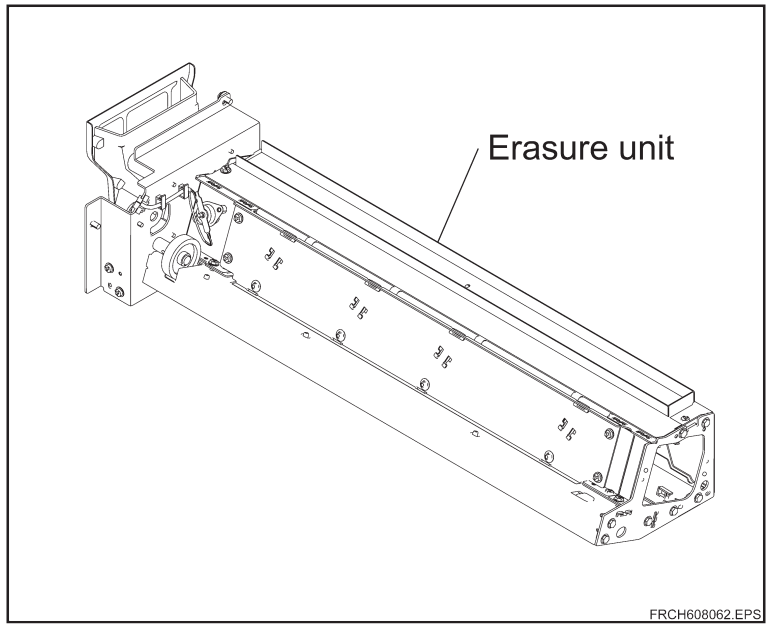
20. **Connect the connector.**


[Connect]
Connector
CN81
FRCH7115.EPS

8. Erasure Unit

8.1 Removing the Filter

1. **Place the erasure unit in the orientation indicated in the figure.**

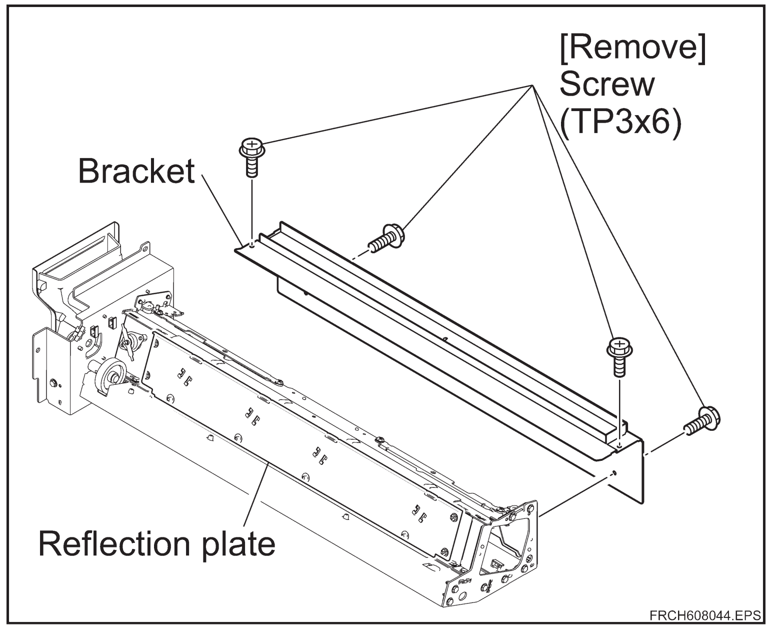

Erasure unit
FRCH608062.EPS

2. **Remove the bracket.**

◆ **NOTE** ◆

Do not raise nor move the erasure unit, holding the reflection plate. If the reflection plate deforms, correct its warp referring to the Check, Replacements and Adjustment of Parts "6.6.3 Check/ Adjustment Procedures".

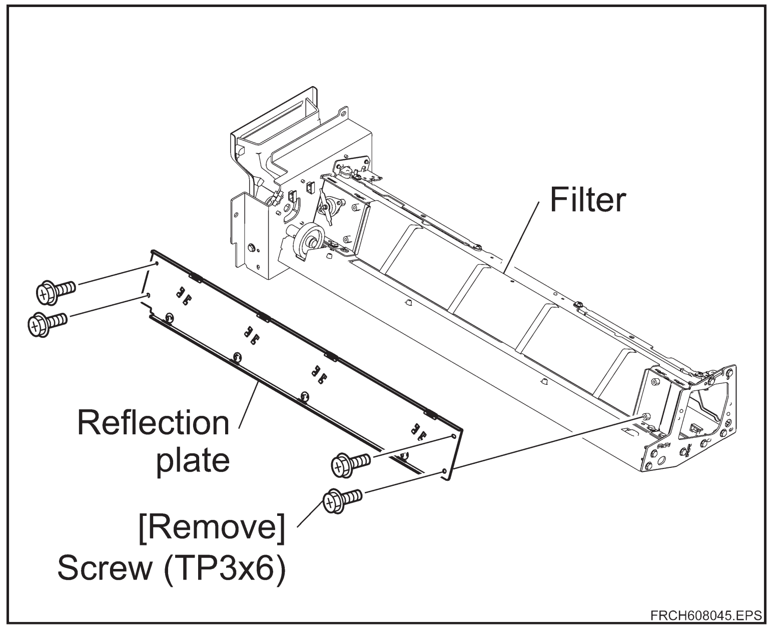
☞ ***{MC:6.6.3_Check/Adjustment Procedures}***


[Remove]
Screw
(TP3x6)
Bracket
Reflection plate
FRCH608044.EPS

3. **Remove the reflection plate.**

◆ **NOTES** ◆

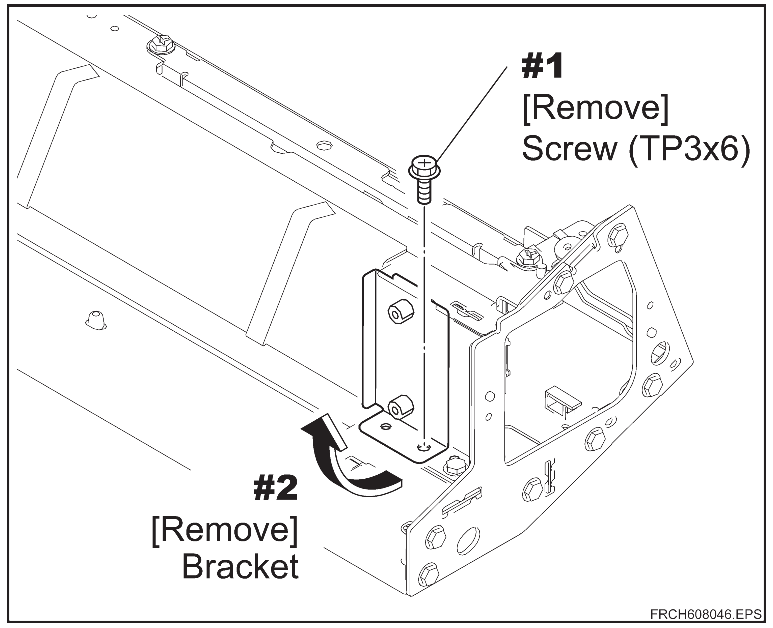
- *Do not strongly grasp the reflection plate and the filter, when removing the reflection plate. Otherwise, the lamp located inside the filter might get damaged.*
- *Do not damage the reflection face of the reflection plate that has been removed. If it gets damaged, IP erasure might not be performed normally.*


Filter
Reflection plate
[Remove]
Screw (TP3x6)
FRCH608045.EPS

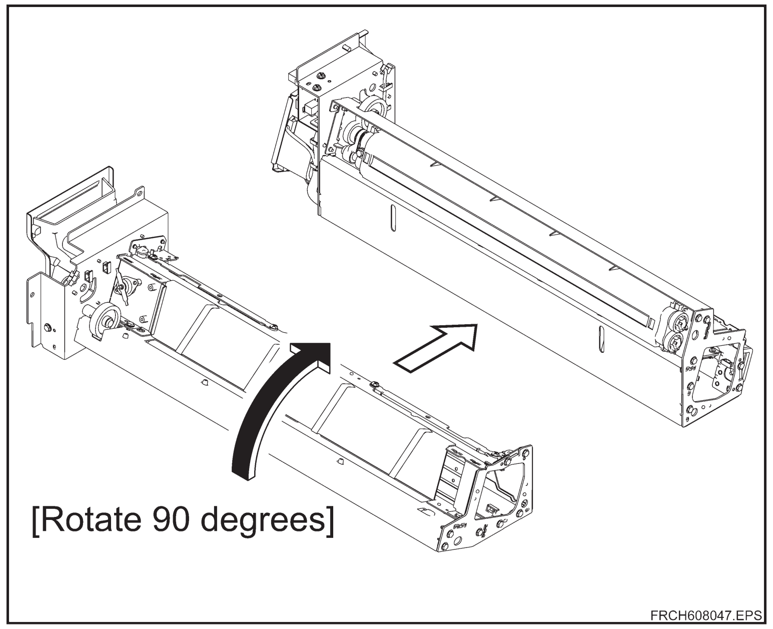
4. **Remove the screws to remove the bracket.**

◆ **NOTE** ◆

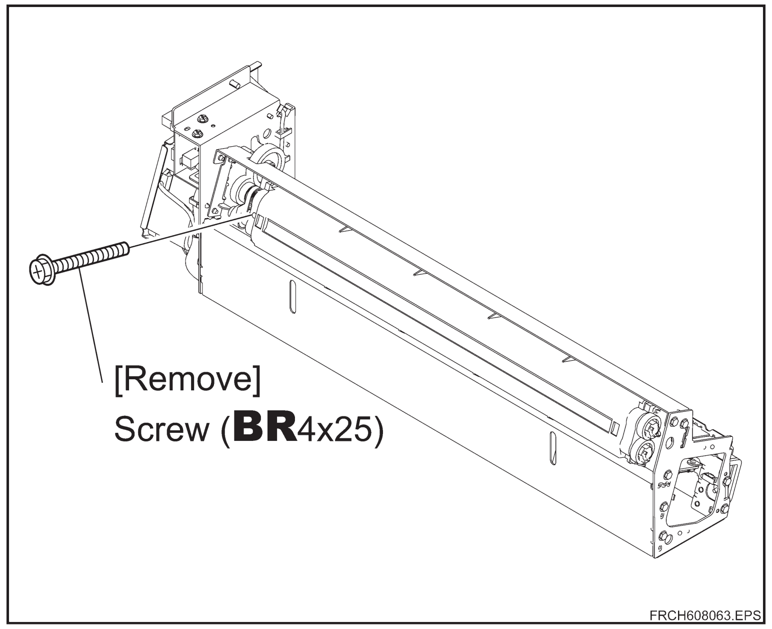
Exercise care not to damage the lamp by the bracket when removing the bracket.


#1
[Remove]
Screw (TP3x6)
#2
[Remove]
Bracket
FRCH608046.EPS

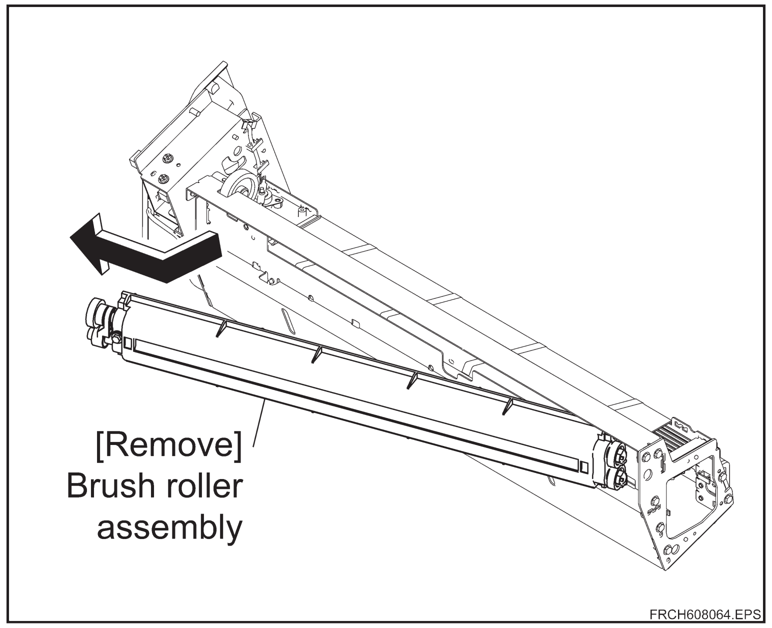
5. **Place the erasure unit in the orientation indicated in the figure.**


[Rotate 90 degrees]
FRCH608047.EPS

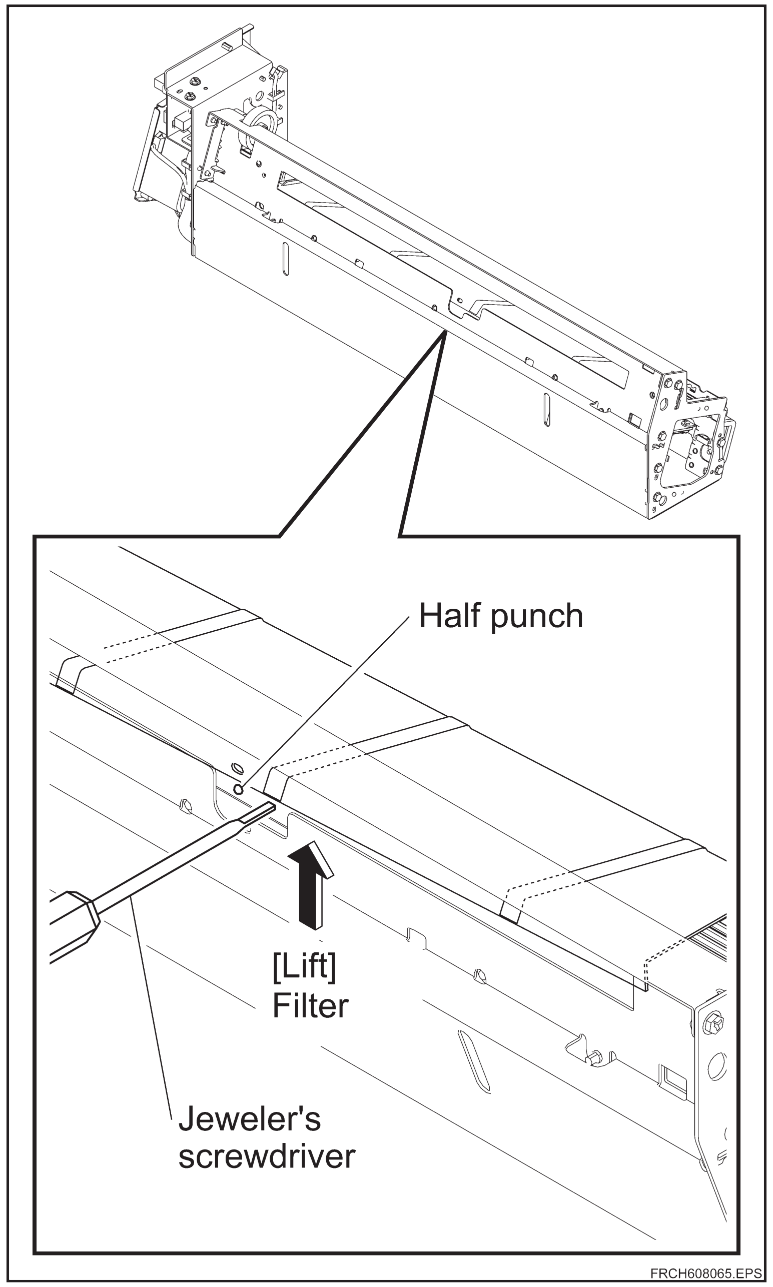
6. **Remove the screws.**


[Remove]
Screw (BR4x25)
FRCH608063.EPS

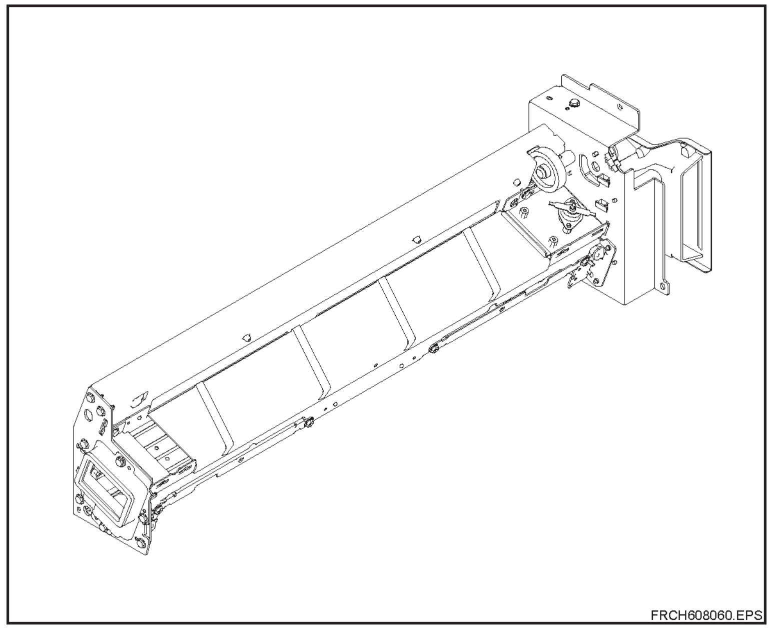
7. **Remove the brush roller assembly.**


[Remove]
Brush roller assembly
FRCH608064.EPS

8. **Lift the filter with a jeweler's screwdriver, and remove it from the half punch.**


Half punch
[Lift]
Filter
Jeweler's screwdriver
FRCH608065.EPS

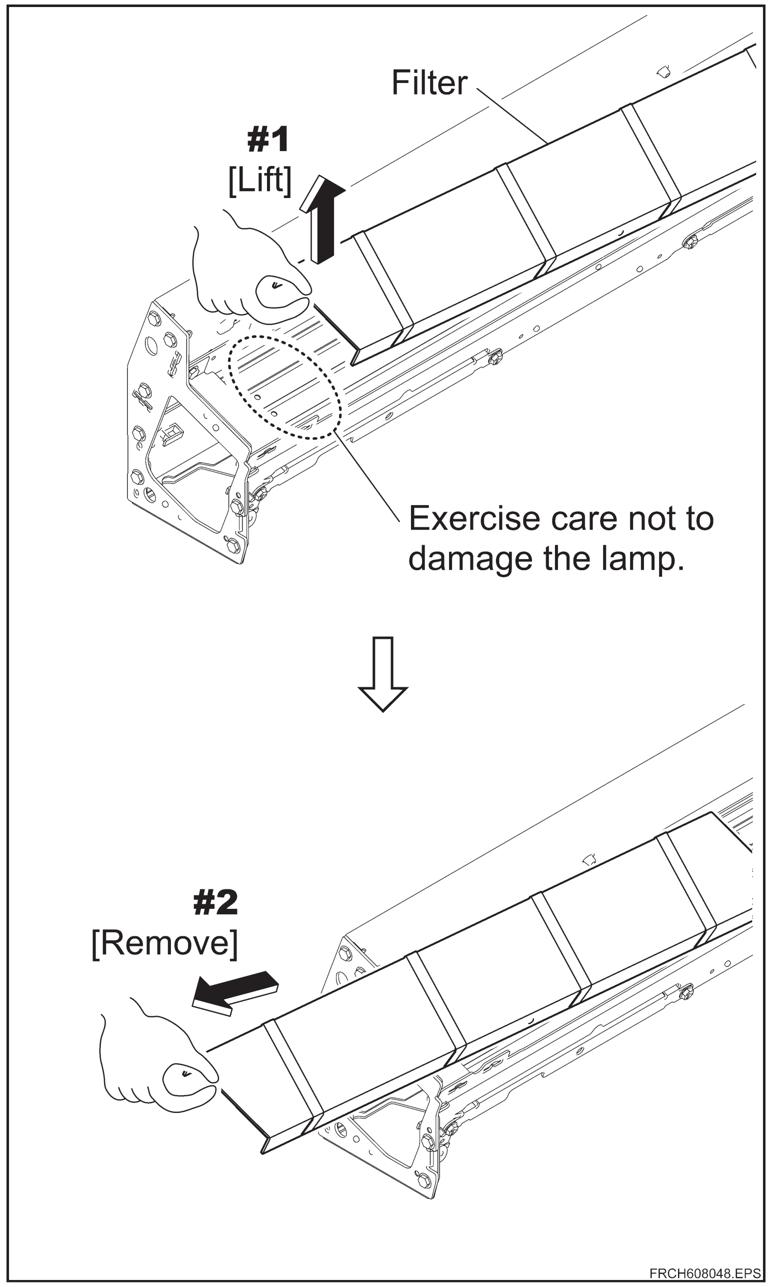
9. **Place the erasure unit in the orientation indicated in the figure.**


FRCH608060.EPS

10. **Lift to remove the filter while watching the lamp.**

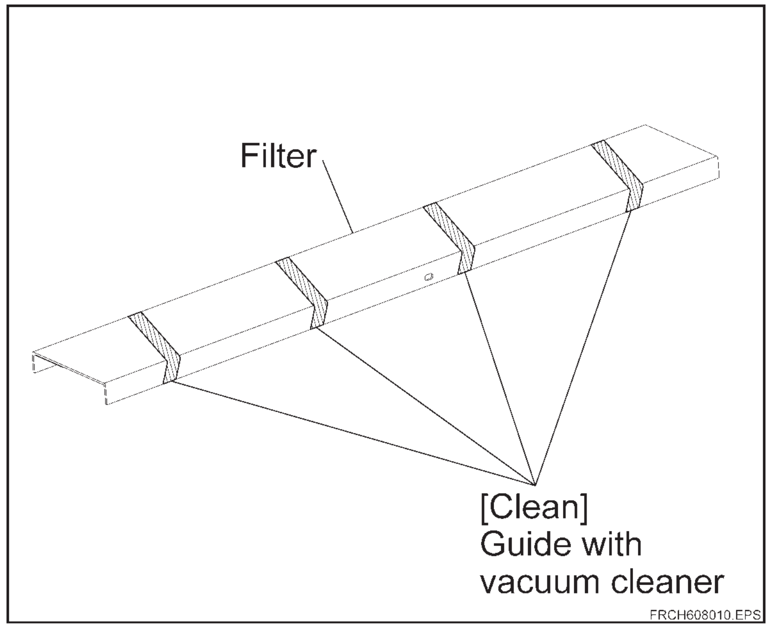
◆ **NOTE** ◆

Exercise care not to damage the lamp with your fingers when removing the filter.


Filter
#1
[Lift]
Exercise care not to damage the lamp.
#2
[Remove]
FRCH608048.EPS

8.2 Cleaning the Filter

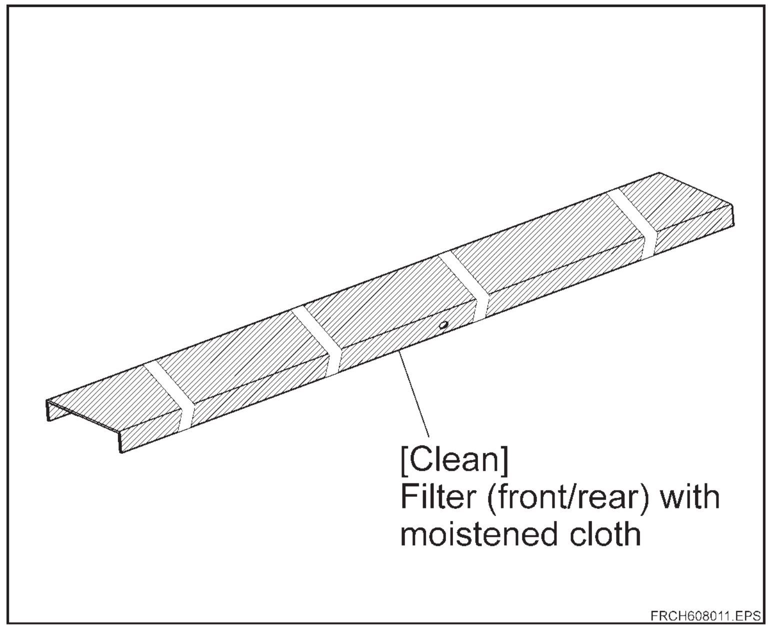
1. **Clean the guide with a vacuum cleaner.**


Filter
[Clean]
Guide with
vacuum cleaner
FRCH608010.EPS

2. **Clean the front and the rear of the filter with a moistened cloth.**

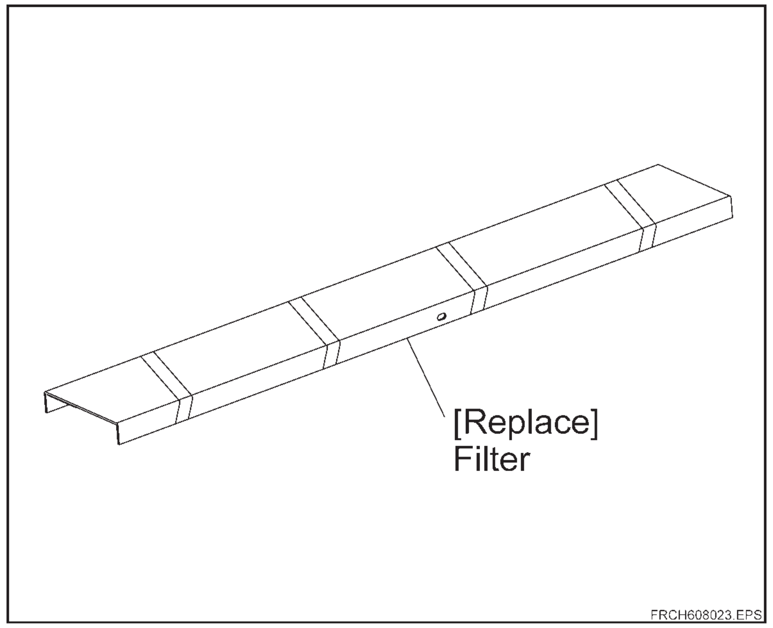
◆ *NOTES* ◆

- *Be sure to clean both the front and the rear of the filter with the moistened cloth.*
- *Exercise care not to wipe the guide with the moistened cloth. Otherwise, the guide might peel.*


[Clean]
Filter (front/rear) with
moistened cloth
FRCH608011.EPS

8.3 Replacing the Filter

1. **Replace the filter.**

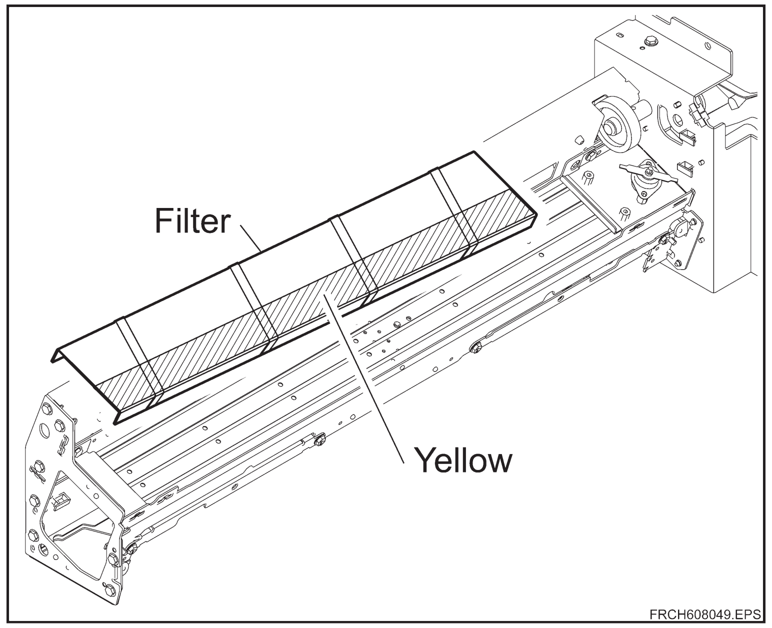

[Replace]
Filter
FRCH608023.EPS

8.4 Reinstalling the Filter

1. **Check the orientation of mounting the filter.**

   ◇ REFERENCE ◇

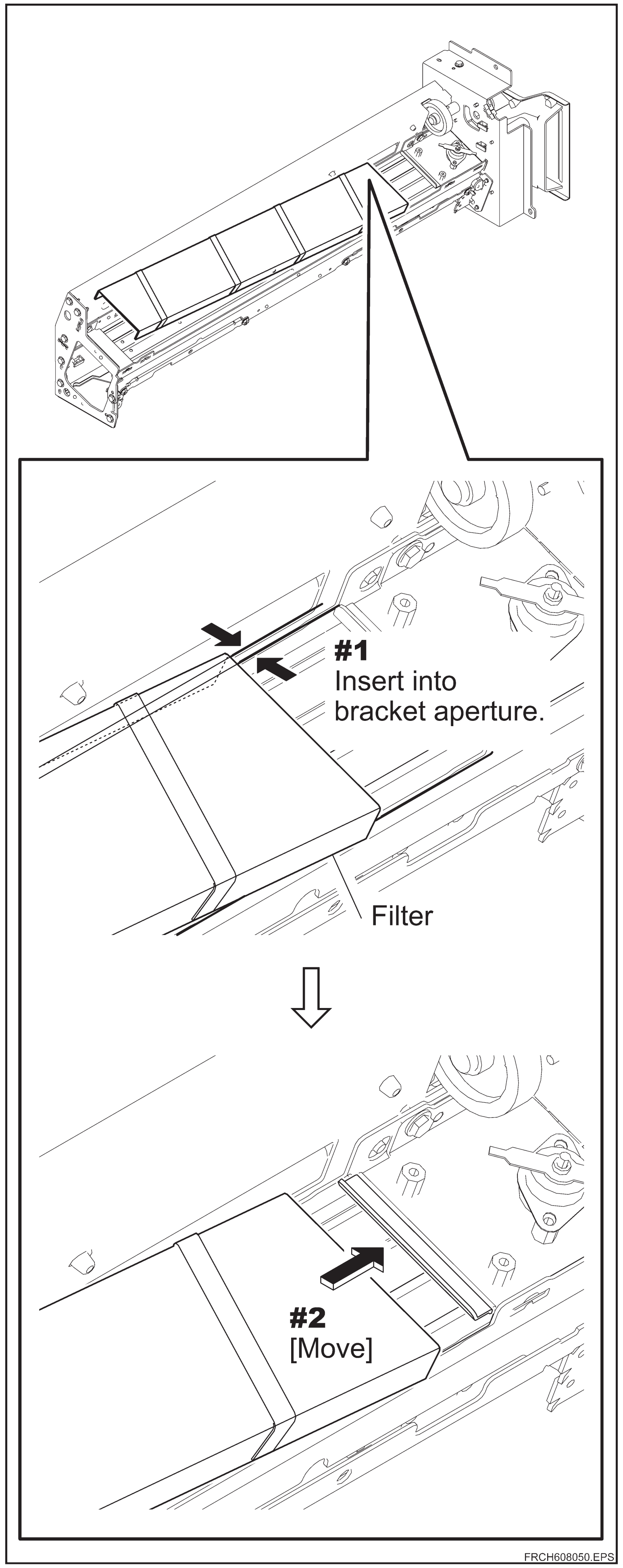
   Determine the orientation of mounting the filter by a yellow portion of the filter.


Filter
Yellow
FRCH608049.EPS

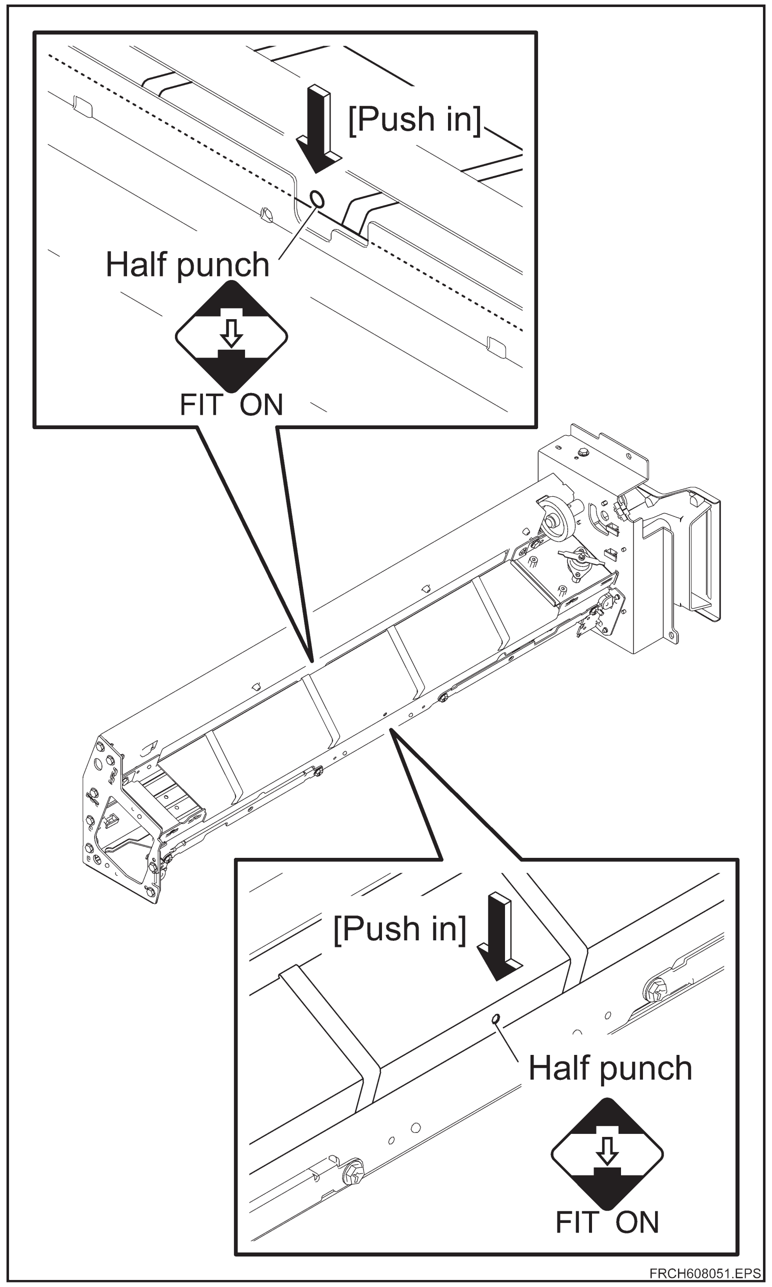
2. **Insert the end of the filter into the aperture of the bracket, move it in the direction of the arrow, and reinstall the filter.**

   ◆ NOTE ◆

   Exercise care not to damage the lamp when reinstalling the filter.


#1
Insert into bracket aperture.
Filter
#2
[Move]
FRCH608050.EPS

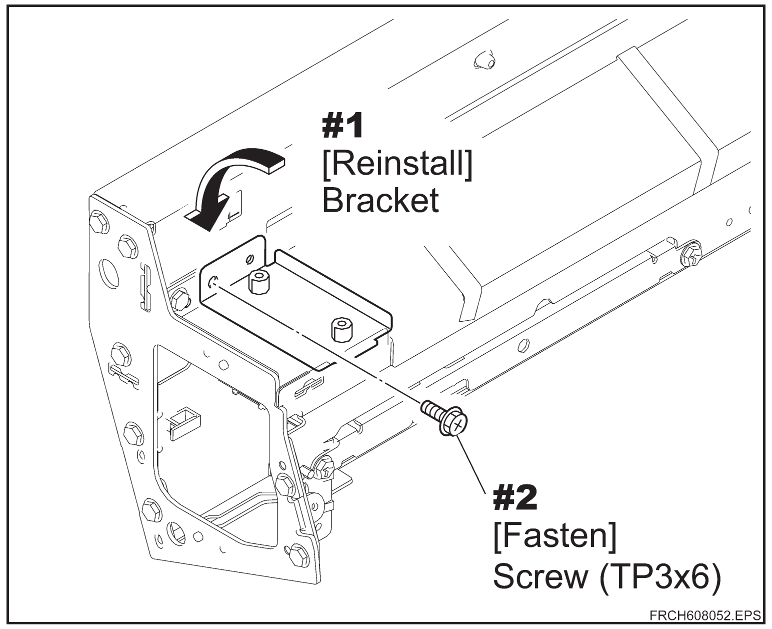
3. **Push the filter into the right and left half punches.**


[Push in]
Half punch
FIT ON
[Push in]
Half punch
FIT ON
FRCH608051.EPS

4. **Reinstall the bracket.**

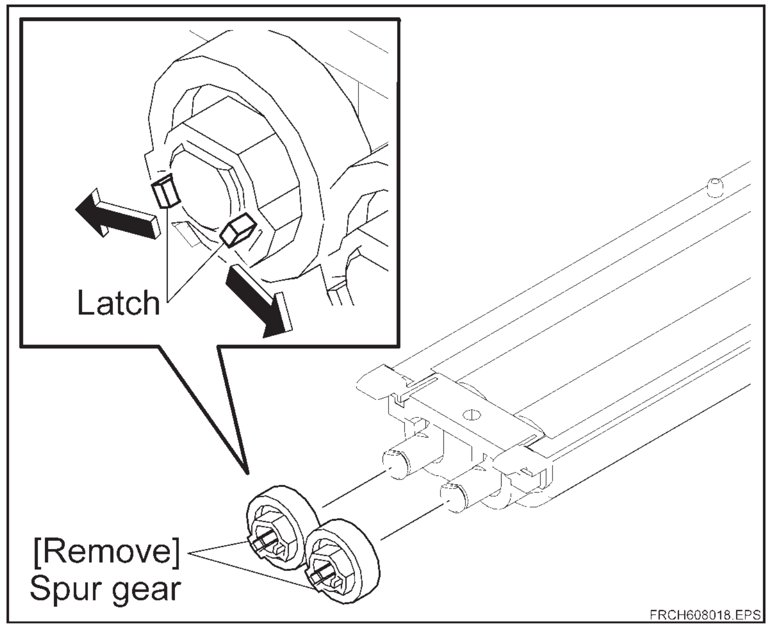
◆ *NOTE* ◆

Exercise care not to damage the lamp when reinstalling the bracket.

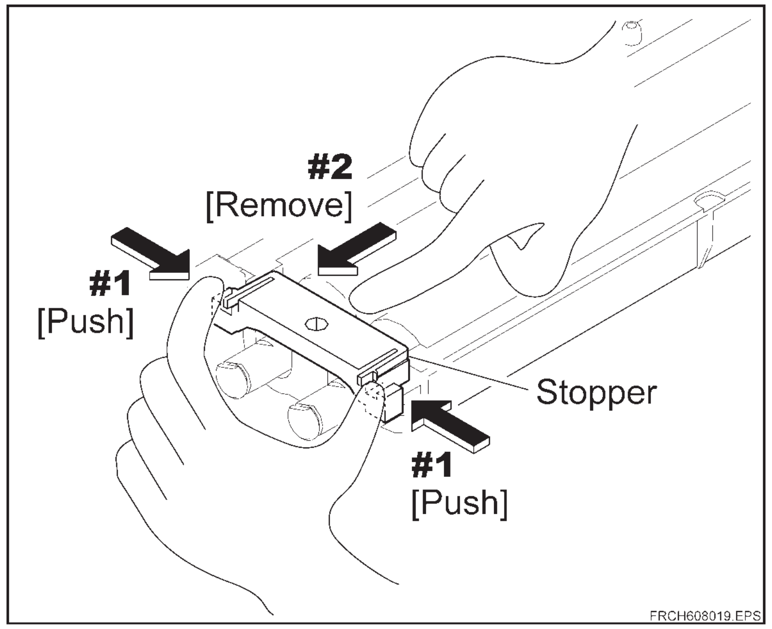

#1
[Reinstall]
Bracket
#2
[Fasten]
Screw (TP3x6)
FRCH608052.EPS

8.5 Cleaning/Replacing the Brush Roller

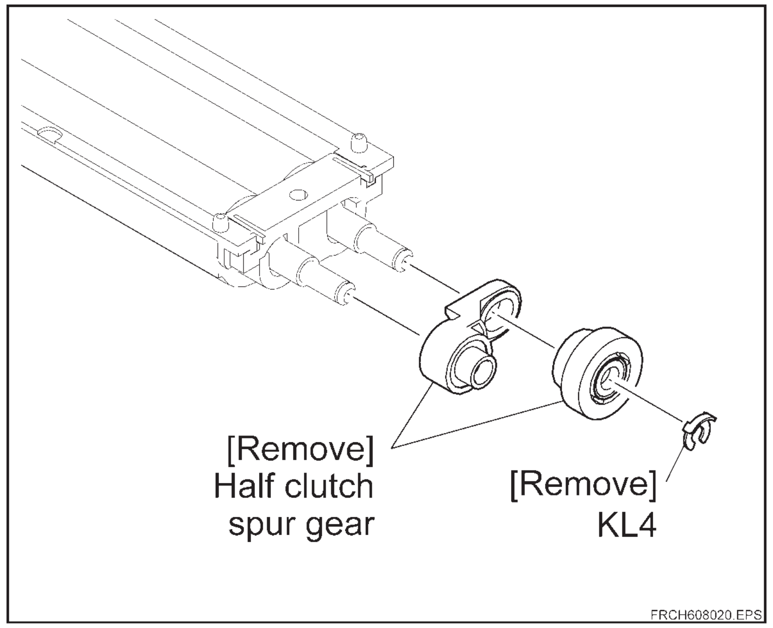
1. **While expanding the latches of the spur gear, remove the spur gears.**


Latch
[Remove]
Spur gear
FRCH608018.EPS

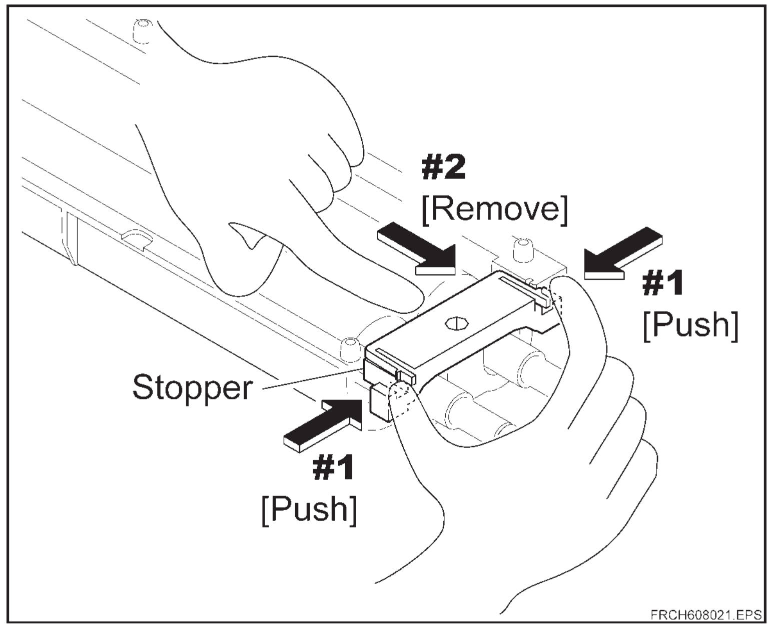
2. **While pushing the latches at both ends of the stopper, remove the stopper.**


#2
[Remove]
#1
[Push]
Stopper
#1
[Push]
FRCH608019.EPS

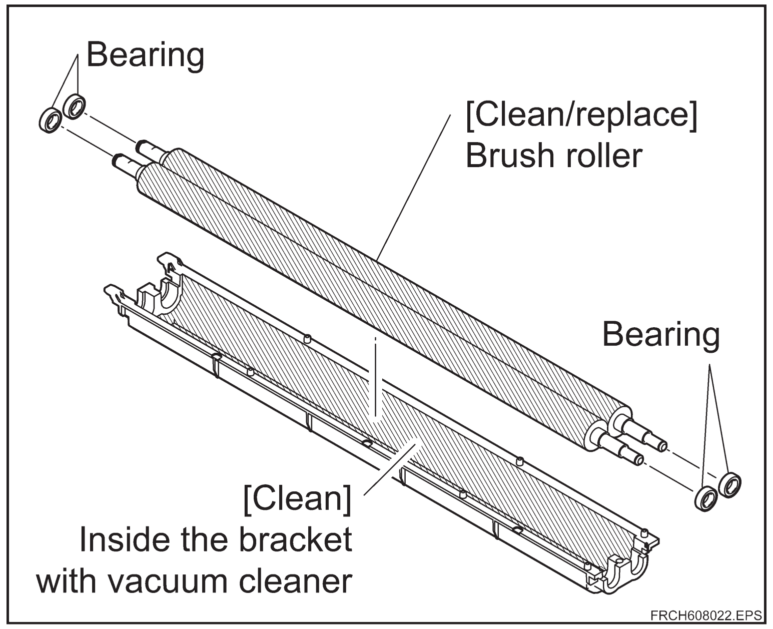
3. **Remove the KL clip and the half clutch spur gear.**


[Remove]
Half clutch
spur gear
[Remove]
KL4
FRCH608020.EPS

4. **While pushing the latches at both ends of the stopper, remove the stopper.**


#2
[Remove]
#1
[Push]
Stopper
#1
[Push]
FRCH608021.EPS

5. **Clean the inside of the bracket with a vacuum cleaner, and then remove the bearings from the brush rollers. When the machine has been used for one year, three years, or five years, clean the brush rollers. When the machine has been used for two years, four years, or six years, replace the brush rollers.**

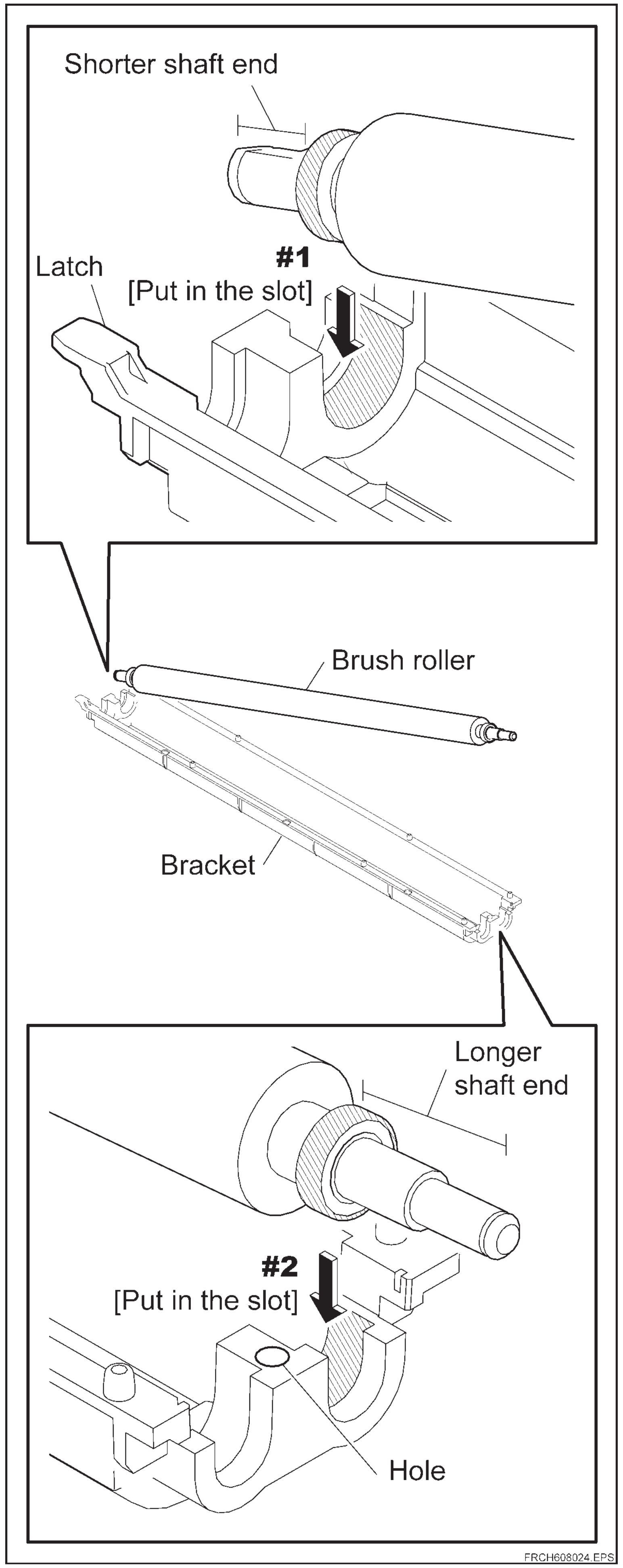

Bearing
[Clean/replace]
Brush roller
Bearing
[Clean]
Inside the bracket
with vacuum cleaner
FRCH608022.EPS

6. **Reinstall the brush roller, watching the orientations of the brush roller and the bracket.**

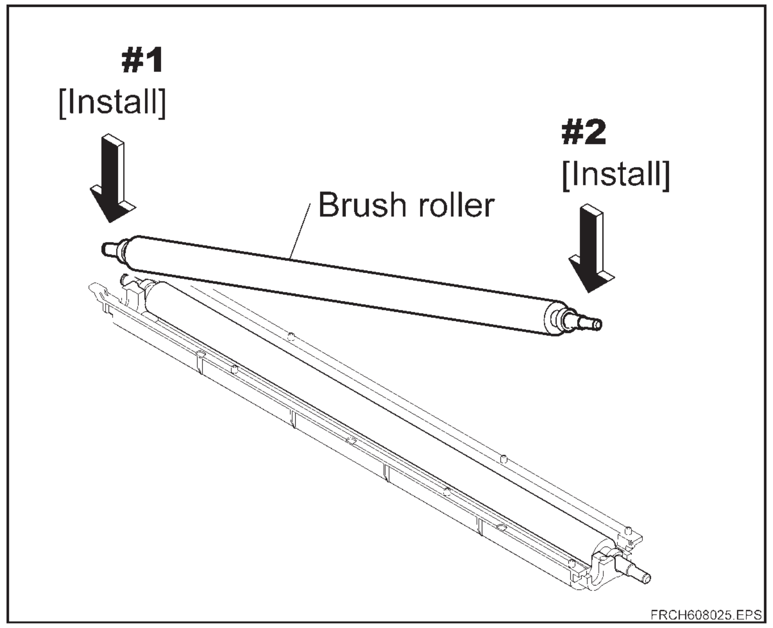
◆ **NOTE** ◆

Install the brush roller in the correct orientation referring to the figure.

- *Insert the shorter shaft end of the brush roller to a region of the bracket with a latch.*
- *Insert the longer shaft end of the brush roller to a region of the bracket with a hole.*


Shorter shaft end
Latch
#1
[Put in the slot]
Brush roller
Bracket
Longer
shaft end
#2
[Put in the slot]
Hole
FRCH608024.EPS

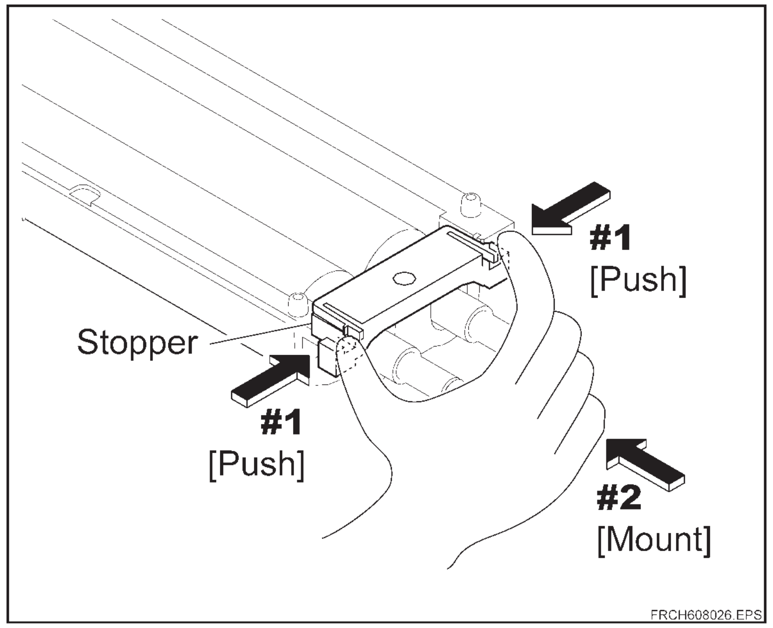
7. **Install the other brush roller similarly to the procedure 6.**


#1
[Install]
#2
[Install]
Brush roller
FRCH608025.EPS

8. **While pushing the latches at both ends of the stopper, mount the stopper. Check to make sure that the stopper will not disengage.**

◆ **NOTE** ◆

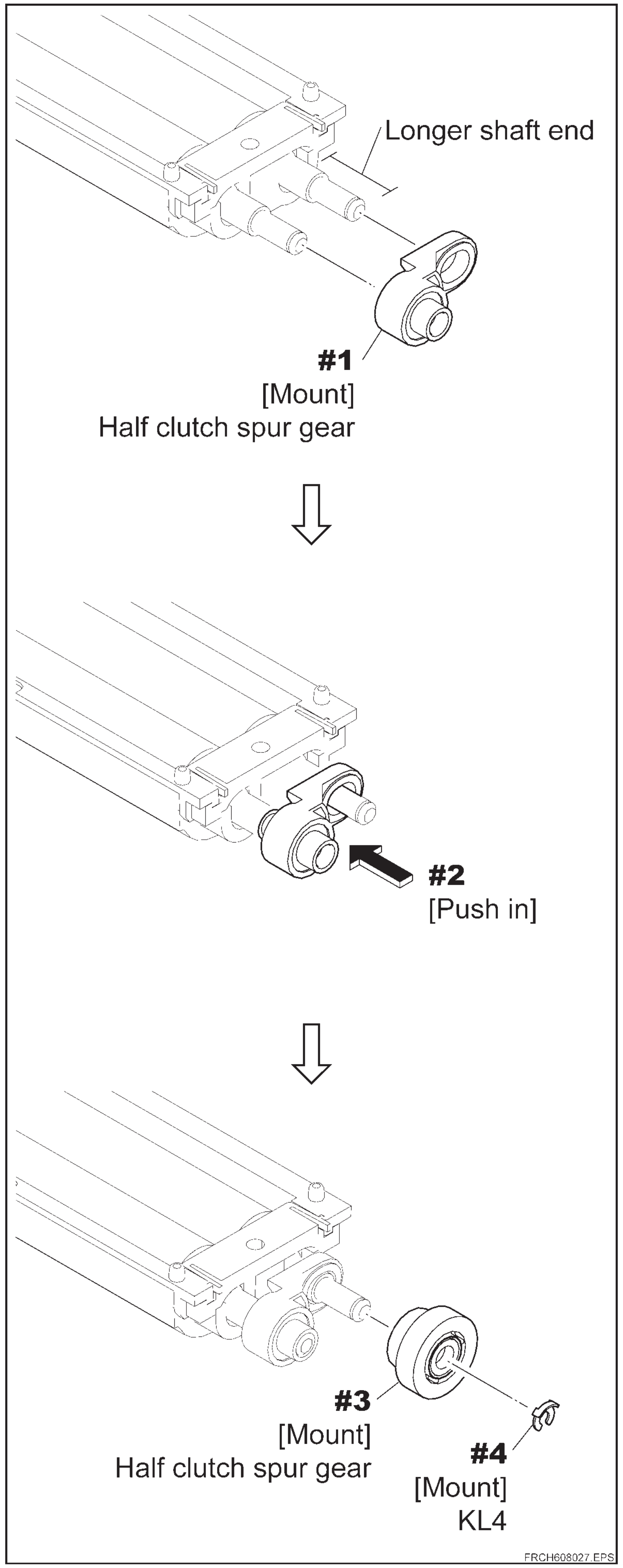
Check to make sure that the stopper latch hooks the inside of the bracket and does not disengage.


#1
[Push]
Stopper
#1
[Push]
#2
[Mount]
FRCH608026.EPS

9. **Mount the half clutch spur gear and the KL clip on the longer shaft end.**

◆ NOTE ◆

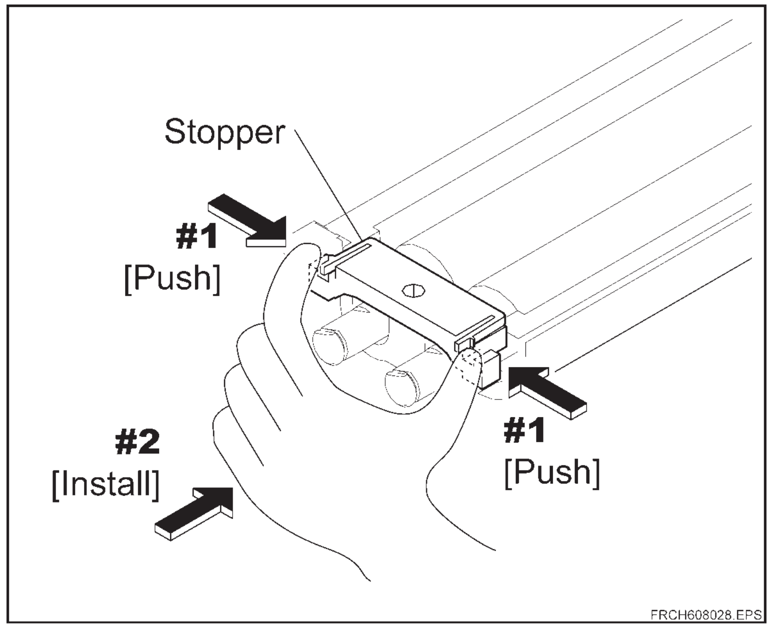
Place the half clutch spur gear in the orientation indicated in the figure. If reversely placed, the brush roller assembly will not work normally.


Longer shaft end
#1
[Mount]
Half clutch spur gear
#2
[Push in]
#3
[Mount]
Half clutch spur gear
#4
[Mount]
KL4
FRCH608027.EPS

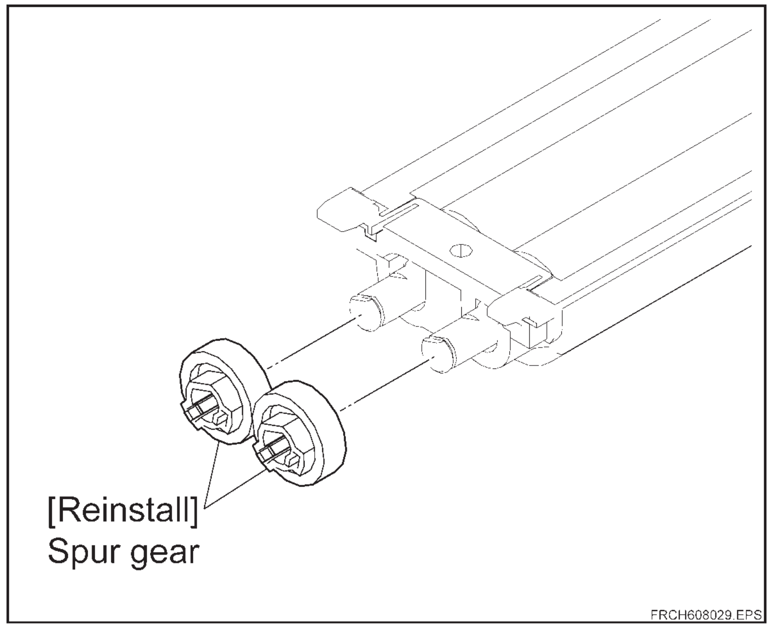
10. **While pushing the latches at both ends of the stopper, mount the stopper. Check to make sure that the stopper will not disengage.**

◆ NOTE ◆

Check to make sure that the stopper latch hooks the inside of the bracket and does not disengage.

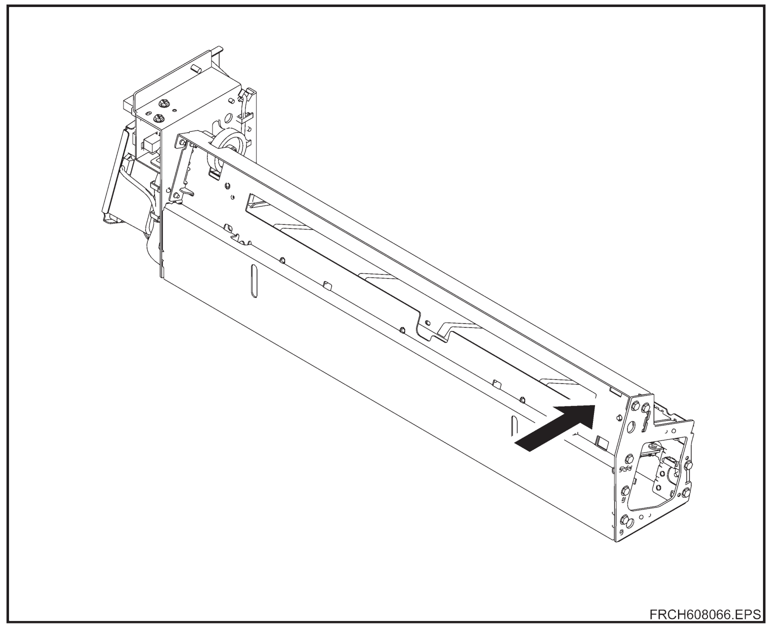

Stopper
#1
[Push]
#2
[Install]
#1
[Push]
FRCH608028.EPS

11. **Reinstall the spur gears.**


[Reinstall]
Spur gear
FRCH608029.EPS

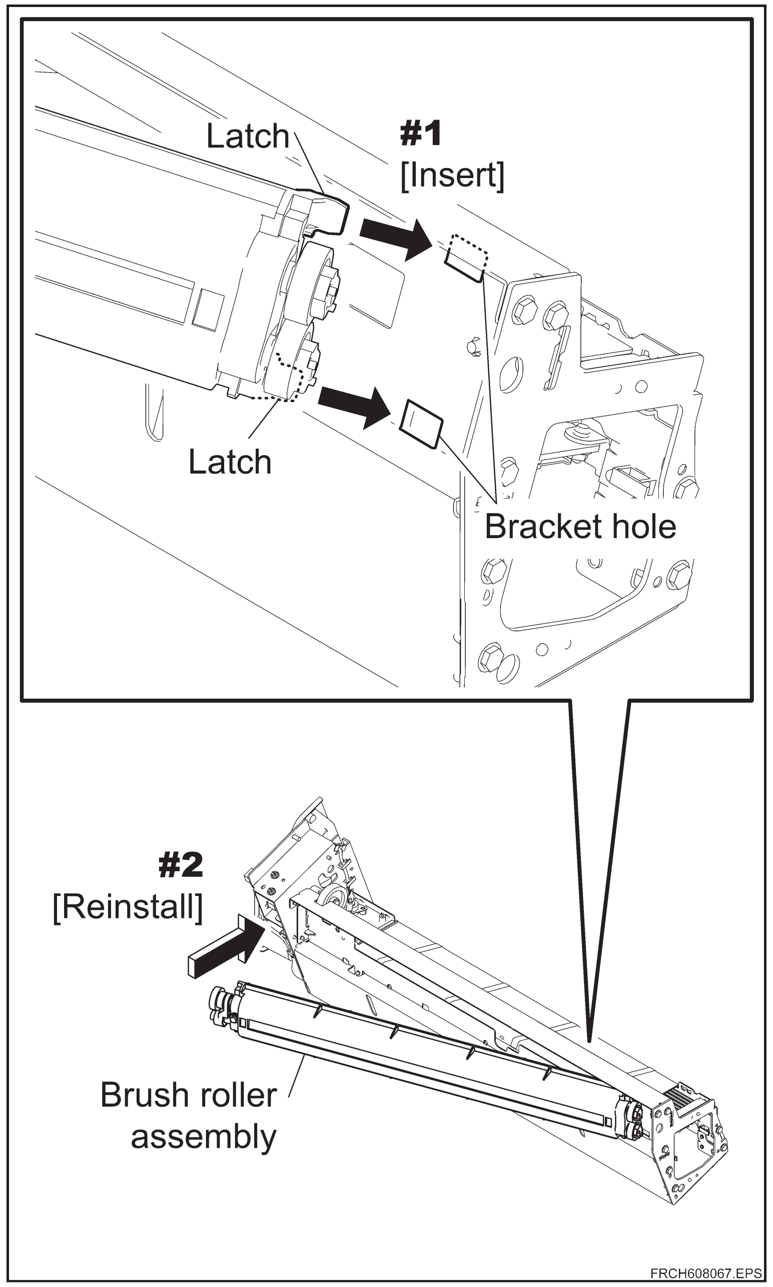
8.6 Reinstalling the Brush Roller Assembly

1. **Take the procedures 2 and 3 from the direction indicated by the arrow in the figure.**



FRCH608066.EPS

2. **Insert the brush roller assembly latches into the bracket holes, before reinstalling.**

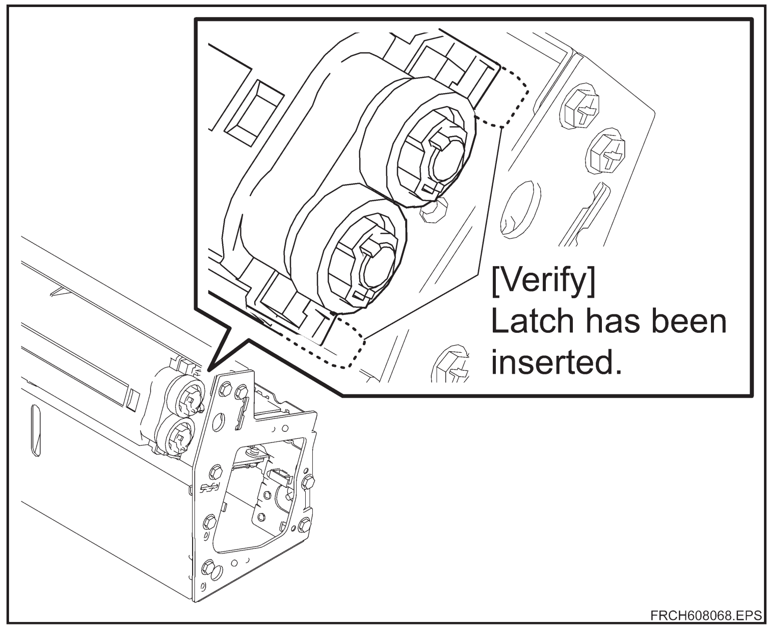


Latch
#1
[Insert]
Latch
Bracket hole
#2
[Reinstall]
Brush roller
assembly
FRCH608067.EPS

3. **Check to make sure that both brush roller assembly latches are inserted into the bracket holes.**

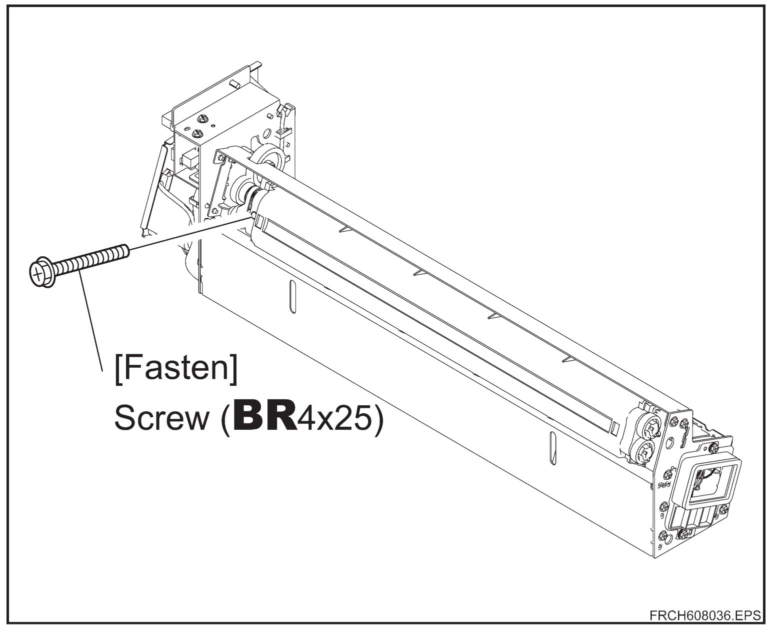
◆ ***NOTE*** ◆

Improper insertion of the brush roller assembly latch may cause an IP jam.

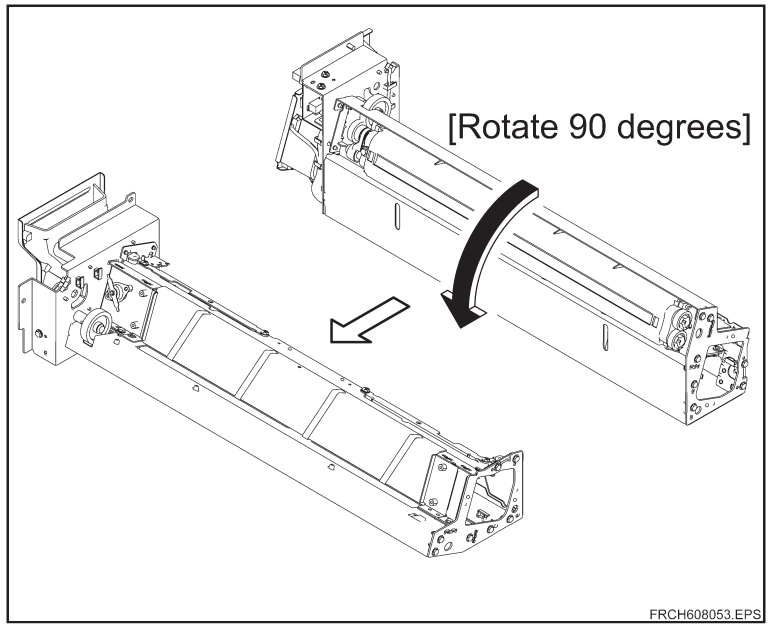


[Verify]
Latch has been
inserted.
FRCH608068.EPS

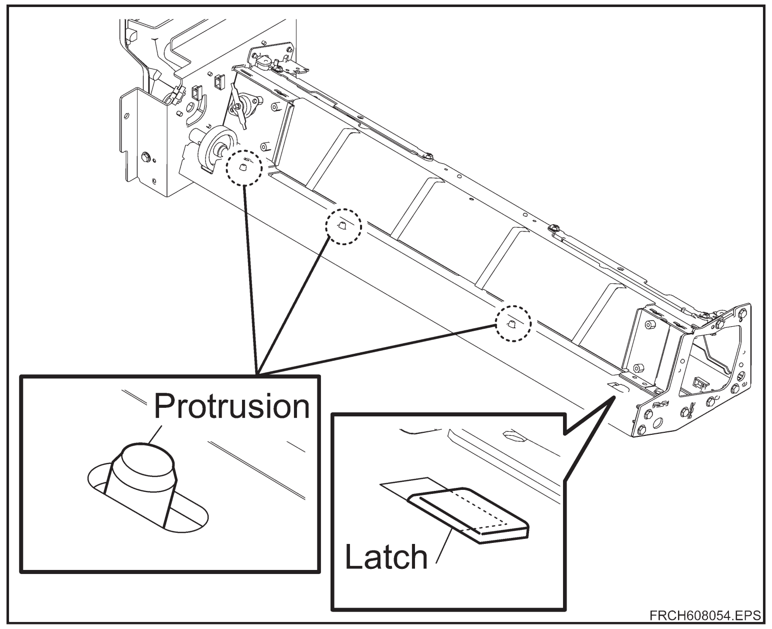
4. **Put on the retaining screw of the brush roller assembly.**


[Fasten]
Screw (BR4x25)
FRCH608036.EPS

5. **Place the erasure unit in the orientation indicated in the figure.**

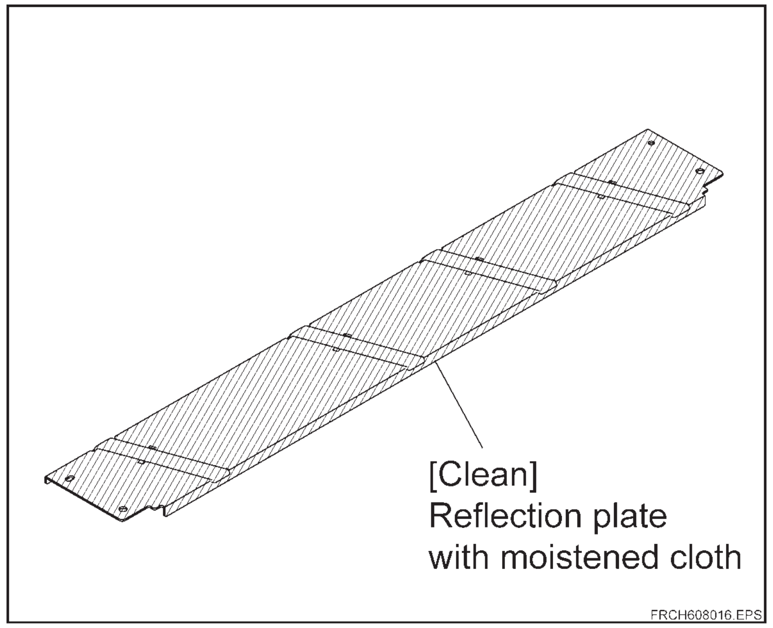

[Rotate 90 degrees]
FRCH608053.EPS

6. **Check to make sure that the brush roller assembly latches and the protrusions are correctly mounted.**


Protrusion
Latch
FRCH608054.EPS

8.7 Cleaning the Reflection Plate

1. **Clean the reflection plate with a moistened cloth.**

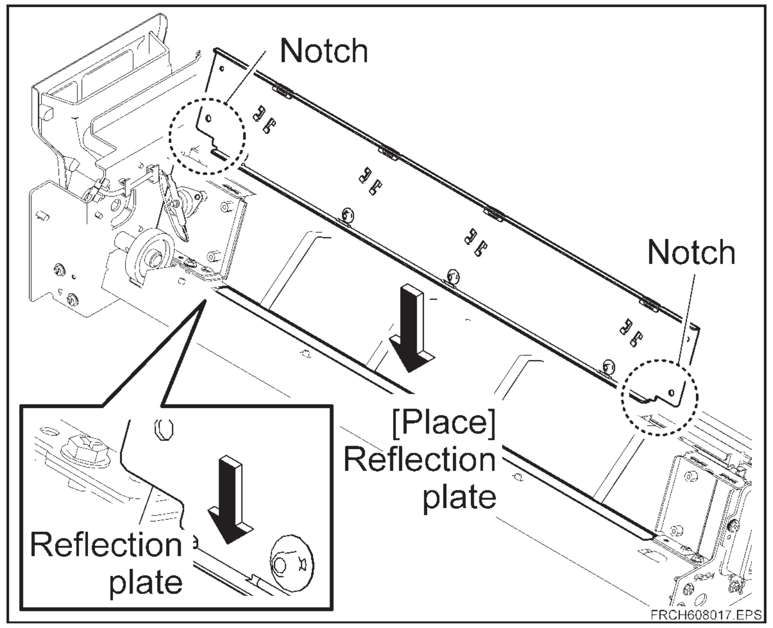

[Clean]
Reflection plate
with moistened cloth
FRCH608016.EPS

8.8 Reinstalling the Reflection Plate

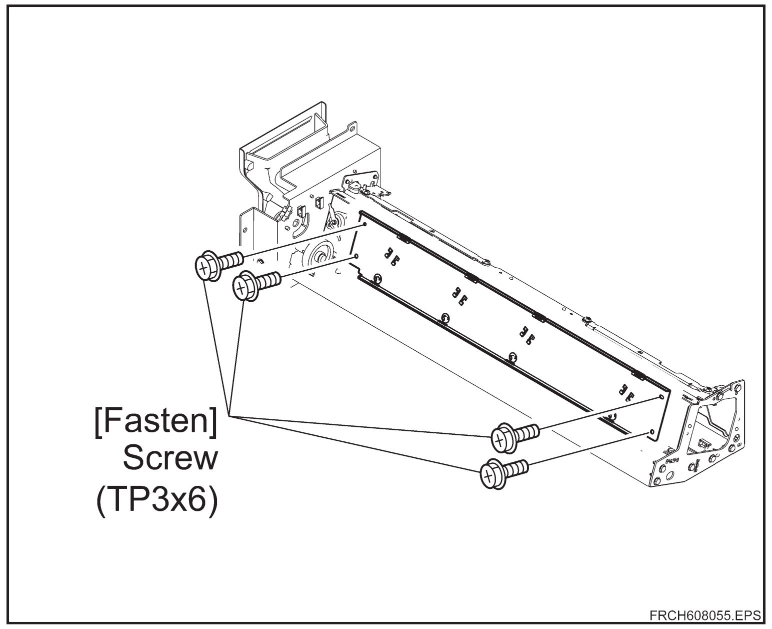
1. **Place the reflection plate with its notches facing downward on the erasure unit.**

◆ NOTE ◆

Exercise care in the orientation of mounting the reflection plate.


Notch
Notch
[Place]
Reflection
plate
Reflection
plate
FRCH608017.EPS

2. **Reinstall the retaining screws of the reflection plate.**

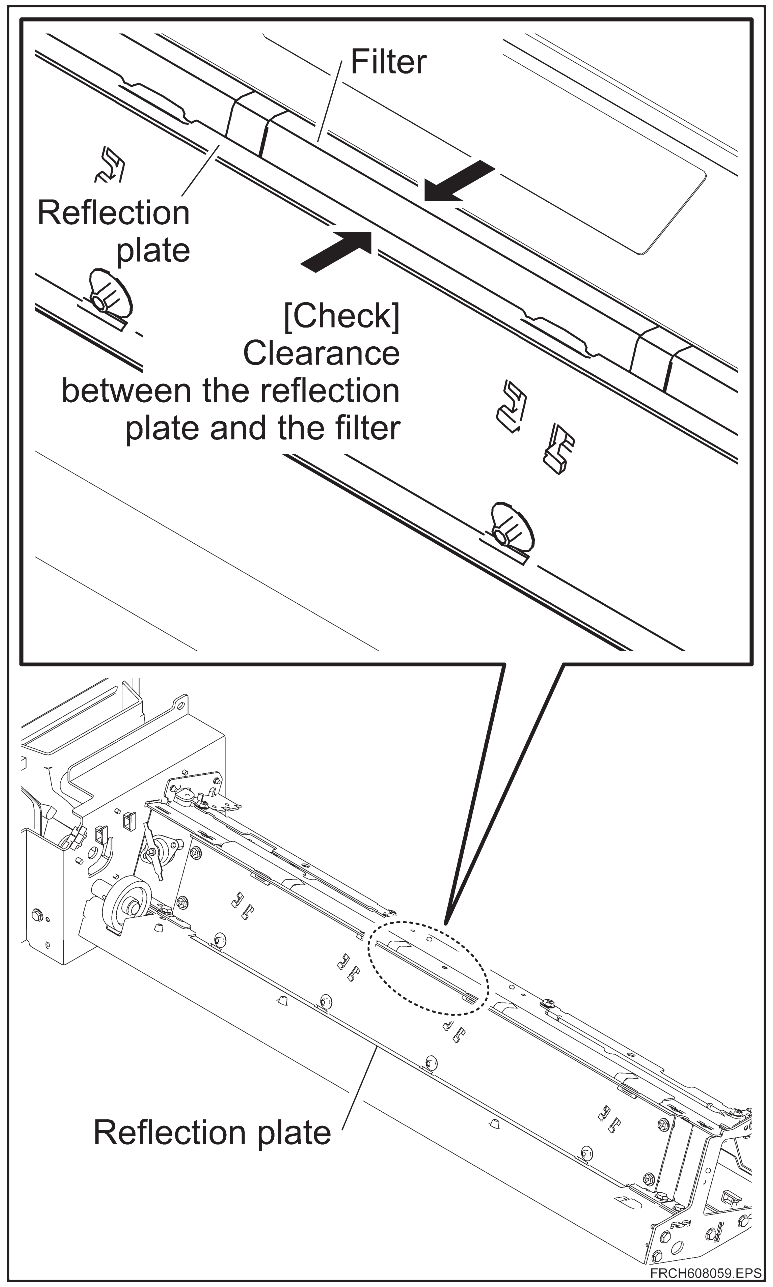

[Fasten]
Screw
(TP3x6)
FRCH608055.EPS

3. **Check to make sure that the clearance is 6 ± 1 mm between the reflection plate and the filter around the center of the reflection plate.**

◆ NOTE ◆

If the clearance between the reflection plate and the filter is smaller than 5 mm or larger than 7 mm, the warp of the reflection plate need be corrected. Correct the warp of the reflection plate, referring to the Check, Replacements and Adjustment of Parts "6.6.3 Check/Adjustment Procedures".

☞ ***{MC:6.6.3_Check/Adjustment Procedures}***

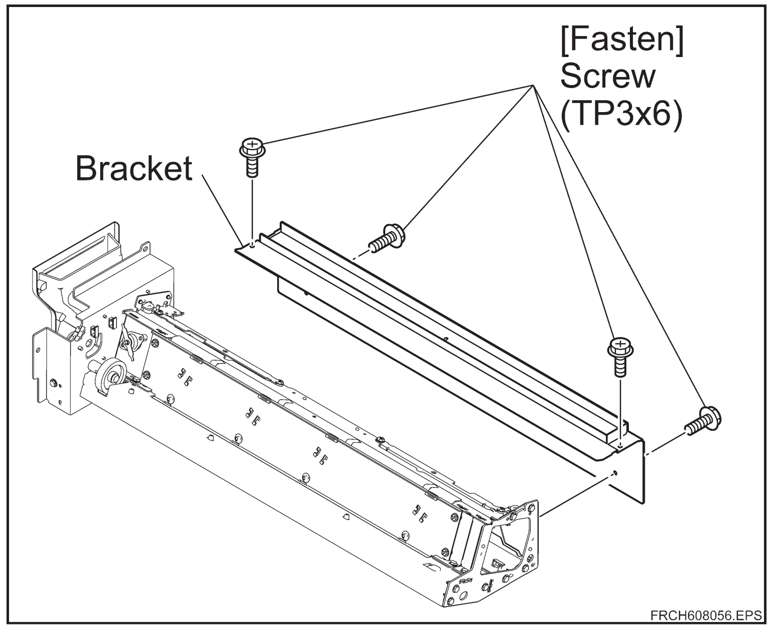

Filter
Reflection
plate
[Check]
Clearance
between the reflection
plate and the filter
Reflection plate
FRCH608059.EPS

4. **Reinstall the bracket.**

◆ NOTE ◆

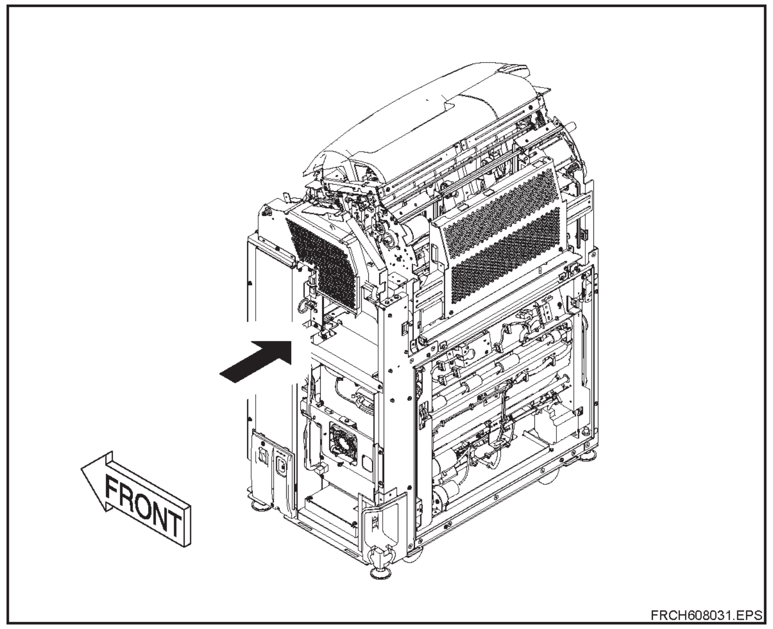
Do not raise nor move the erasure unit, holding the reflection plate. If the reflection plate deforms, correct its warp referring to the Check, Replacements and Adjustment of Parts "6.6.3 Check/ Adjustment Procedures".

☞ ***{MC:6.6.3_Check/Adjustment Procedures}***

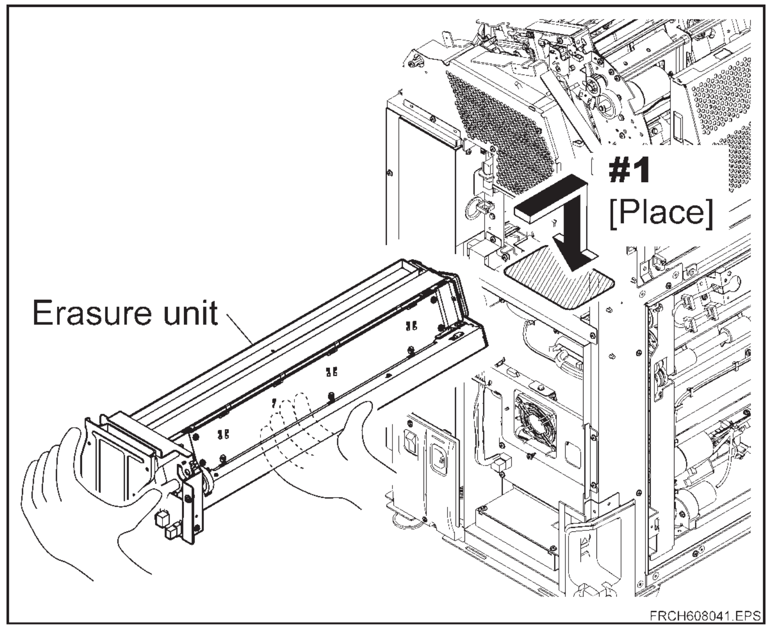

[Fasten]
Screw
(TP3x6)
Bracket
FRCH608056.EPS

8.9 Reinstalling the Erasure Unit

1. **Take the procedures from 2 to 6 from the direction indicated by the arrow in the figure.**


FRONT
FRCH608031.EPS

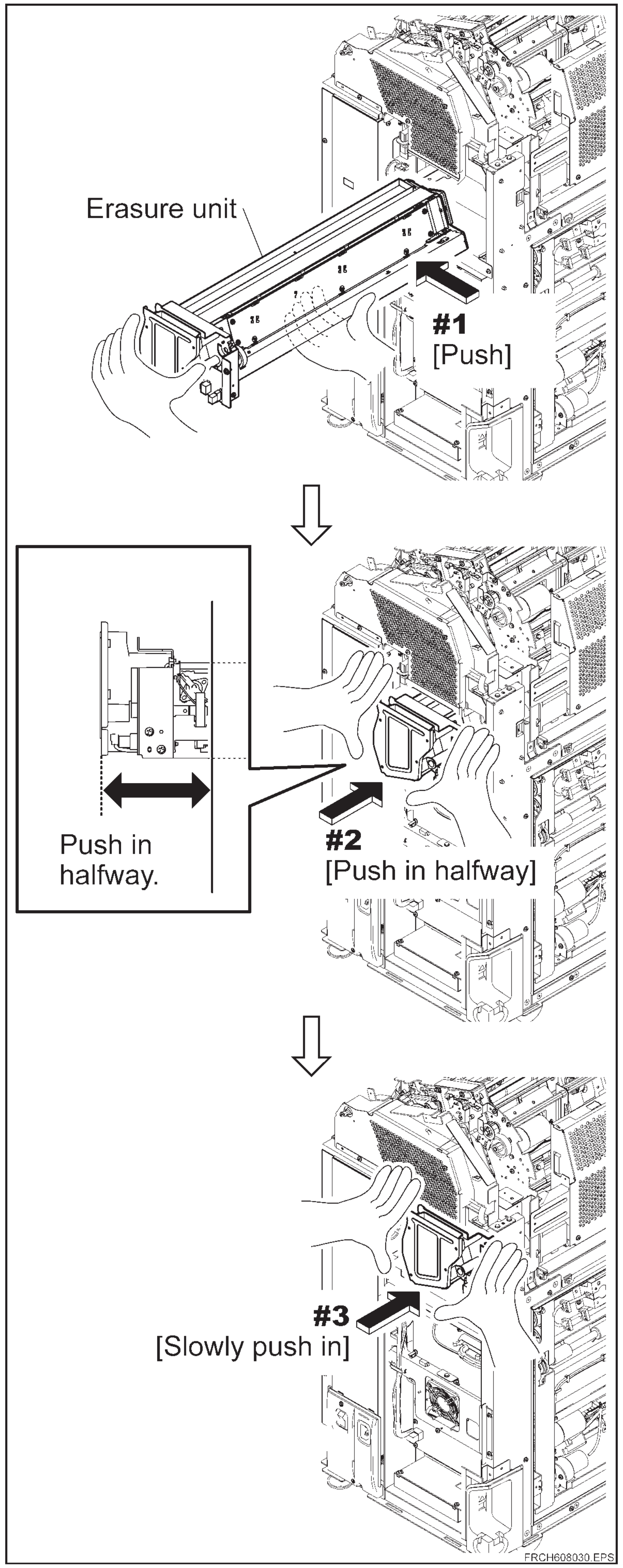
2. **Place the erasure unit in the housing (shaded portion), supporting it on the positions indicated in the figure.**


#1
[Place]
Erasure unit
FRCH608041.EPS

3. **While pushing the erasure unit in the direction of the arrow, push it halfway into the housing. Push into the innermost while exercising care not to have the cable caught.**

◆ **NOTES** ◆

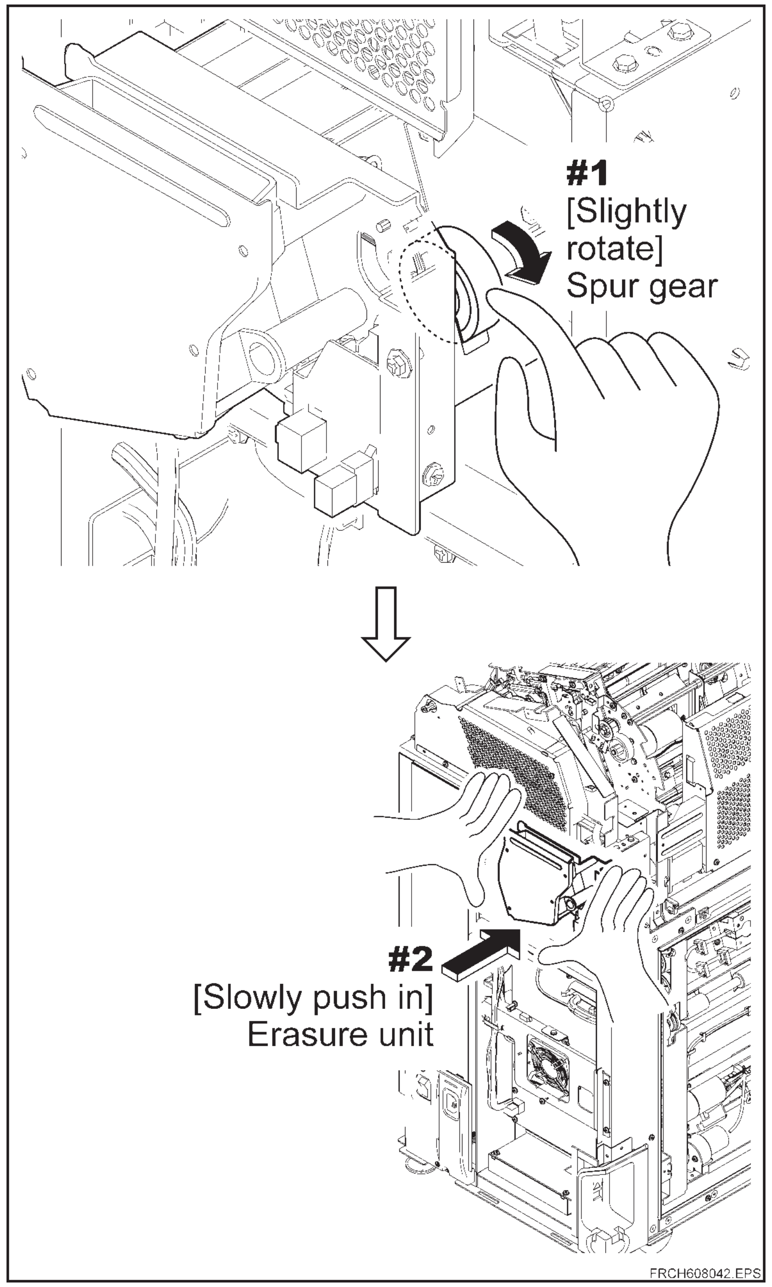
- *If the erasure unit cannot be pushed to the innermost in the housing, do not push it forcibly. The spur gear of the erasure unit might get damaged.*
- *If the erasure unit can be pushed into the innermost without the cassette set unit and the spur gear of the erasure unit interfering with each other, the procedure 4 need not be performed. Proceed to the procedure 5.*


Erasure unit
#1
[Push]
Push in
halfway.
#2
[Push in halfway]
#3
[Slowly push in]
FRCH608030.EPS

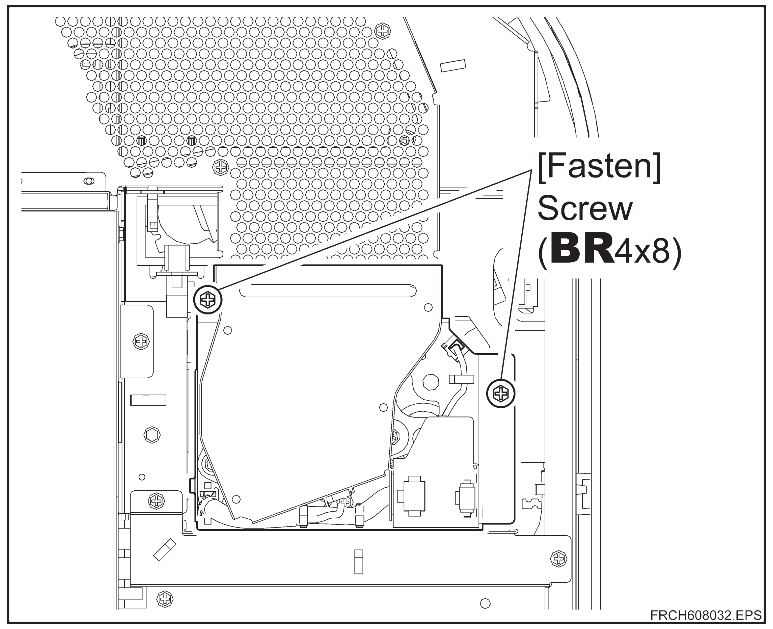
4. **Pull out the erasure unit. Slightly rotate the spur gear, and then push the erasure unit slowly into the housing.**

◆ **NOTE** ◆

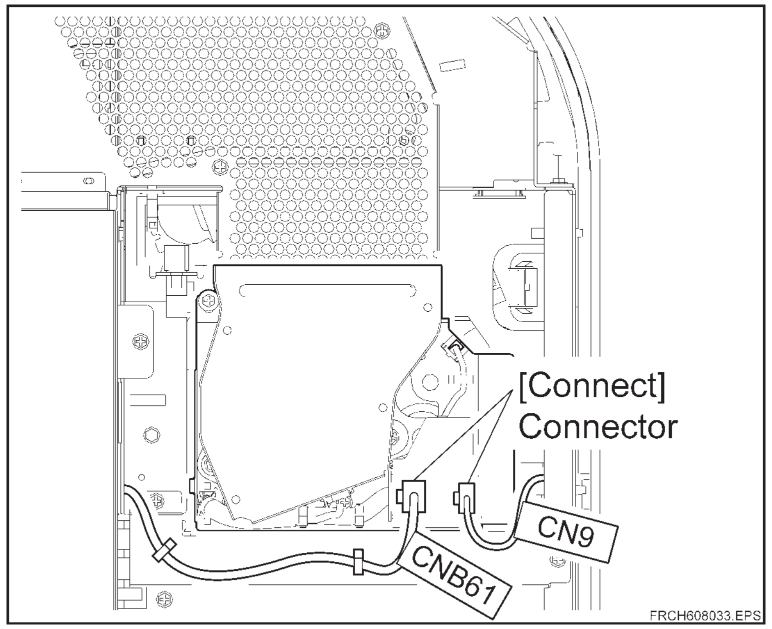
If the erasure unit cannot be pushed to the innermost in the housing, do not push it forcibly. The spur gear of the erasure unit might get damaged.


#1
[Slightly rotate] Spur gear
#2
[Slowly push in] Erasure unit
FRCH608042.EPS

5. **Reinstall the retaining screws of the erasure unit.**


[Fasten] Screw (BR4x8)
FRCH608032.EPS

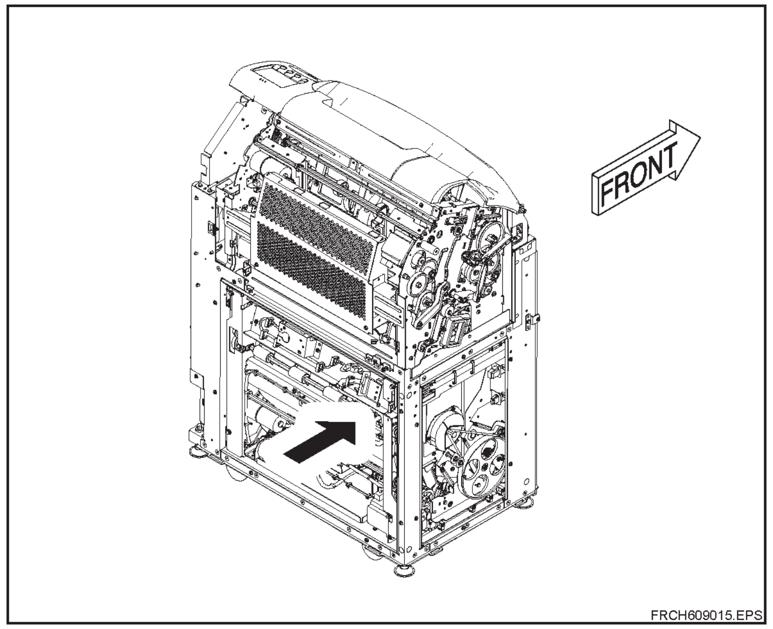
6. **Connect the connectors.**


[Connect] Connector
CN9
CNB61
FRCH608033.EPS

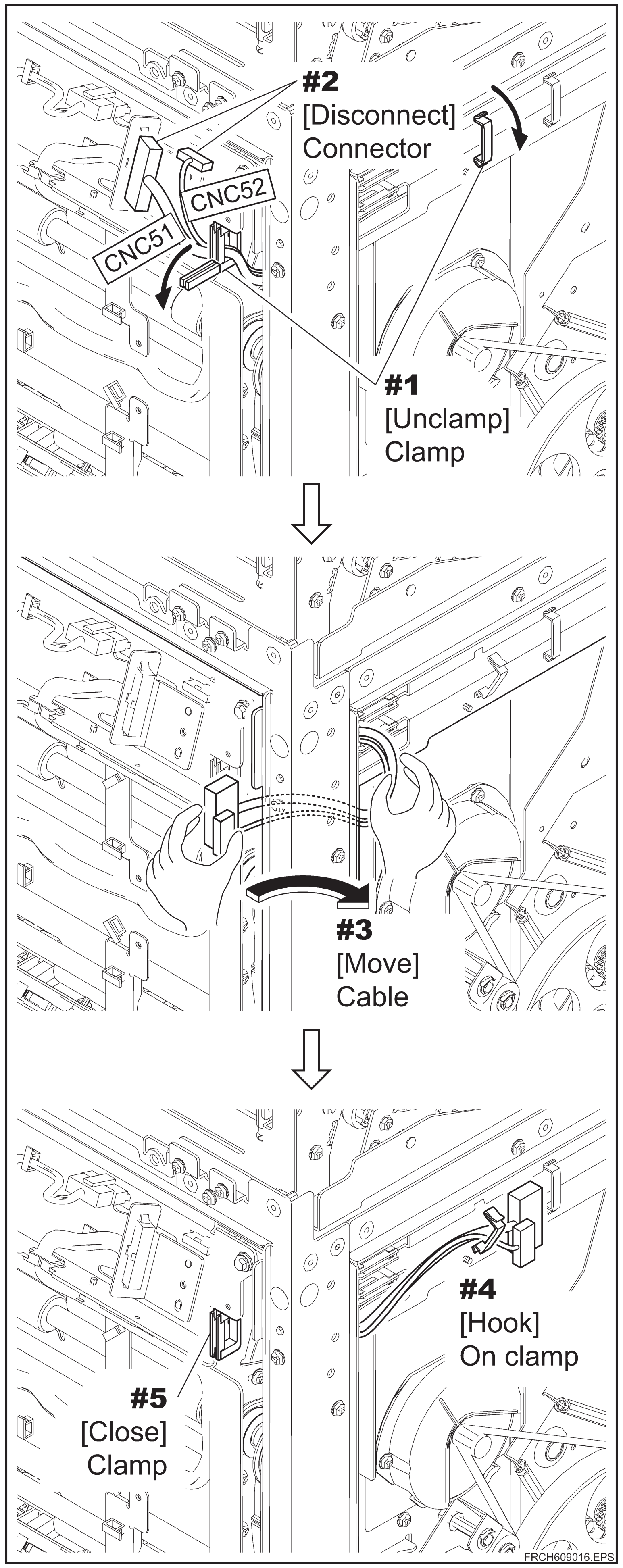
9. Side-Positioning Conveyor Unit

9.1 Removing the Side-Positioning Conveyor Unit

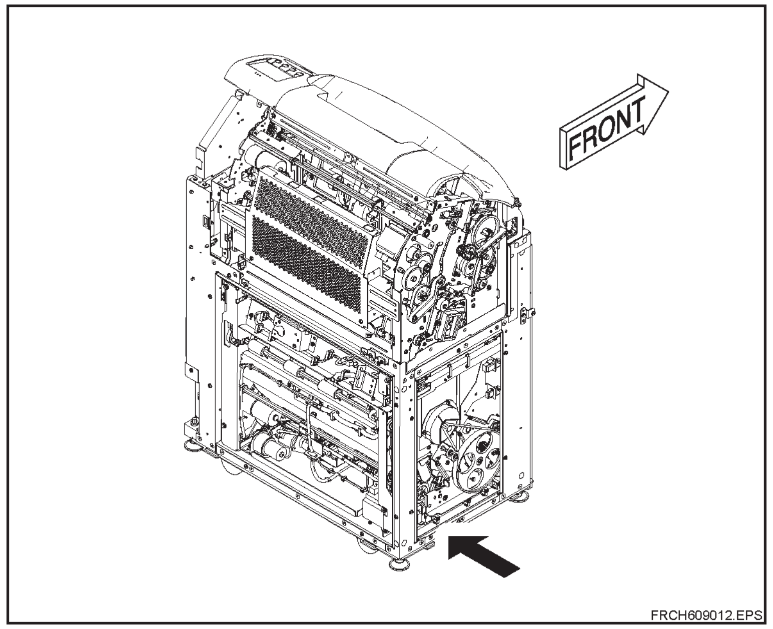
1. **Take the procedure 2 from the direction indicated by the arrow in the figure.**


FRONT
FRCH609015.EPS

2. **Unclamp the clamp, and disconnect the connector. Move the cable toward the side face for the protection of the cable, and hook it on the clamp. Close the clamp.**


#2
[Disconnect]
Connector
CNC52
CNC51
#1
[Unclamp]
Clamp
#3
[Move]
Cable
#4
[Hook]
On clamp
#5
[Close]
Clamp
FRCH609016.EPS

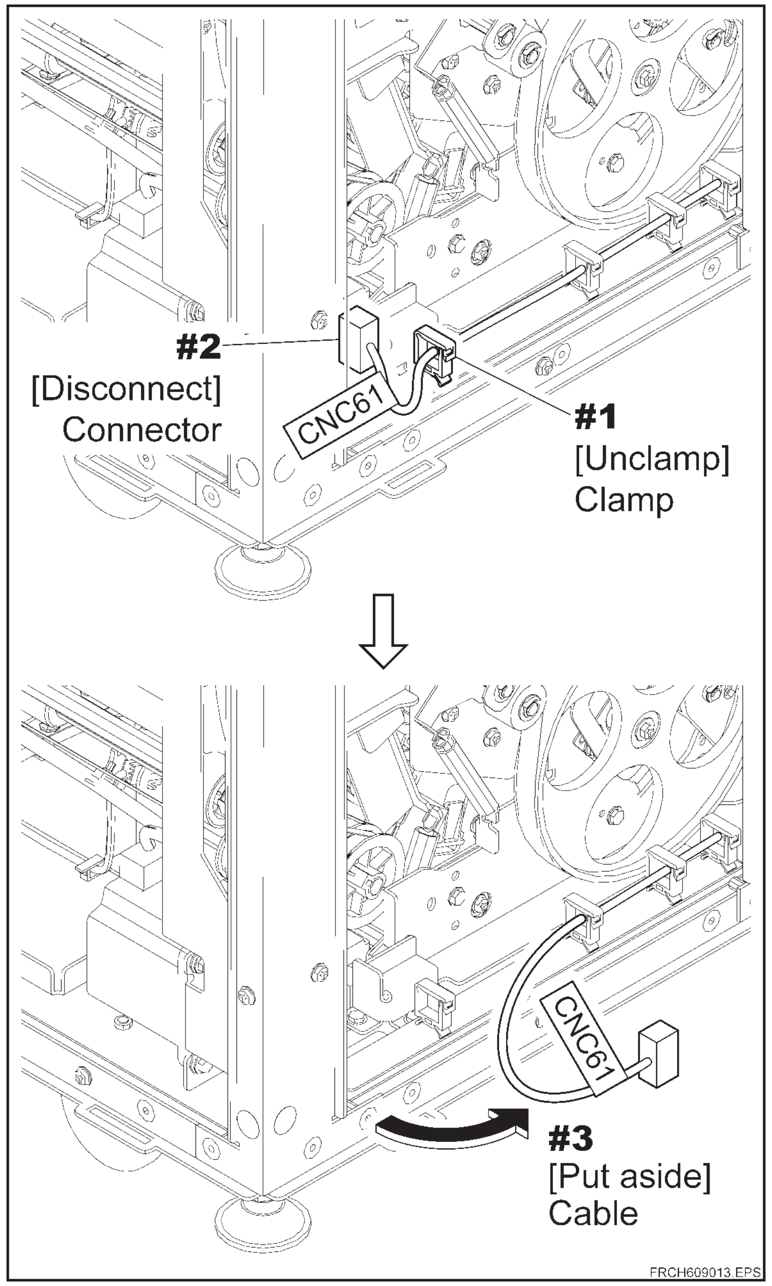
3. **Take the procedures 4 and 5 from the direction indicated by the arrow in the figure.**


FRONT
FRCH609012.EPS

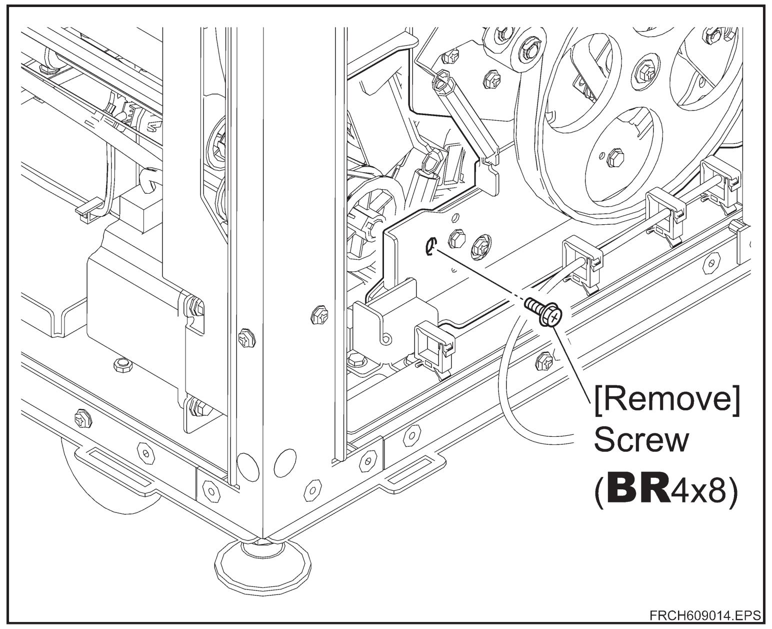
4. **Unclamp the clamp, and disconnect the connector.**
Set aside the cable out of the housing for the protection of the cable.

◆ *NOTE* ◆

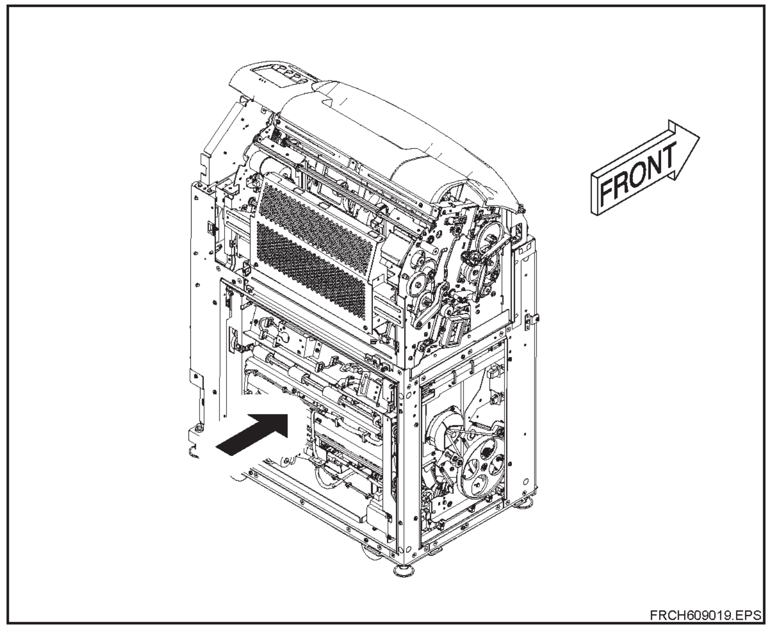
Be sure to put the cable aside out of the housing. Otherwise, the cable and the connector might get caught when removing/reinstalling the side-positioning conveyor unit.


#2
[Disconnect]
Connector
CNC61
#1
[Unclamp]
Clamp
CNC61
#3
[Put aside]
Cable
FRCH609013.EPS

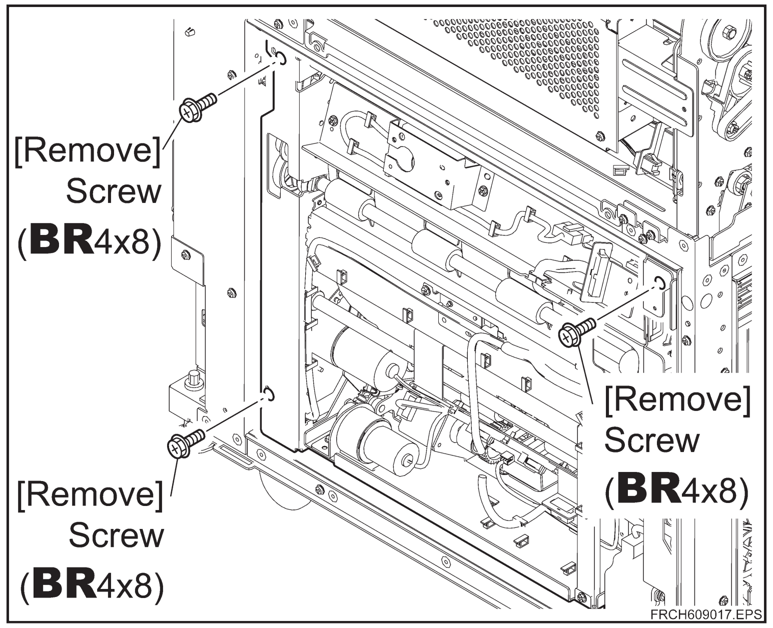
5. **Remove the retaining screw of the side-positioning conveyor unit.**


[Remove]
Screw
(BR4x8)
FRCH609014.EPS

6. **Take the procedures 7 and 8 from the direction indicated by the arrow in the figure.**


FRONT
FRCH609019.EPS

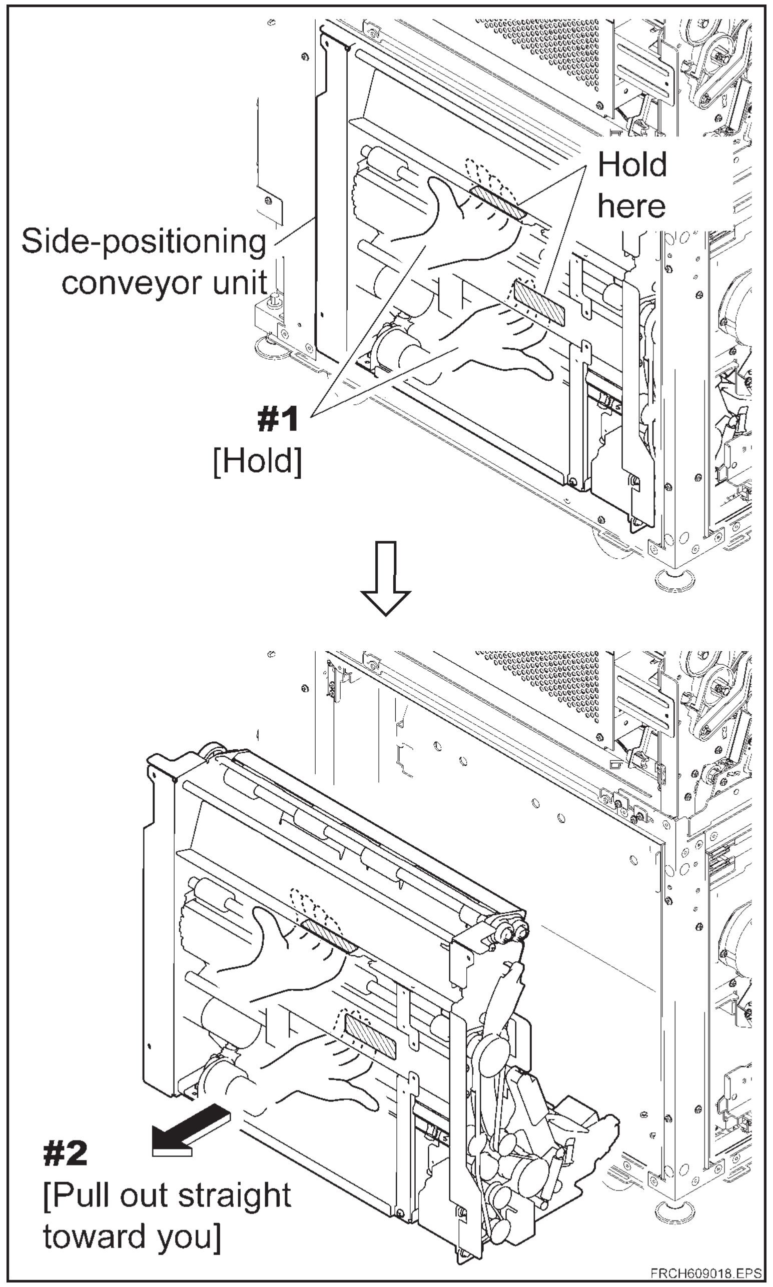
7. **Remove the retaining screw of the side-positioning conveyor unit.**


[Remove]
Screw
(BR4x8)
[Remove]
Screw
(BR4x8)
[Remove]
Screw
(BR4x8)
FRCH609017.EPS

8. **Supporting the side-positioning conveyor unit on the positions indicated in the figure, pull the unit straight toward you.**

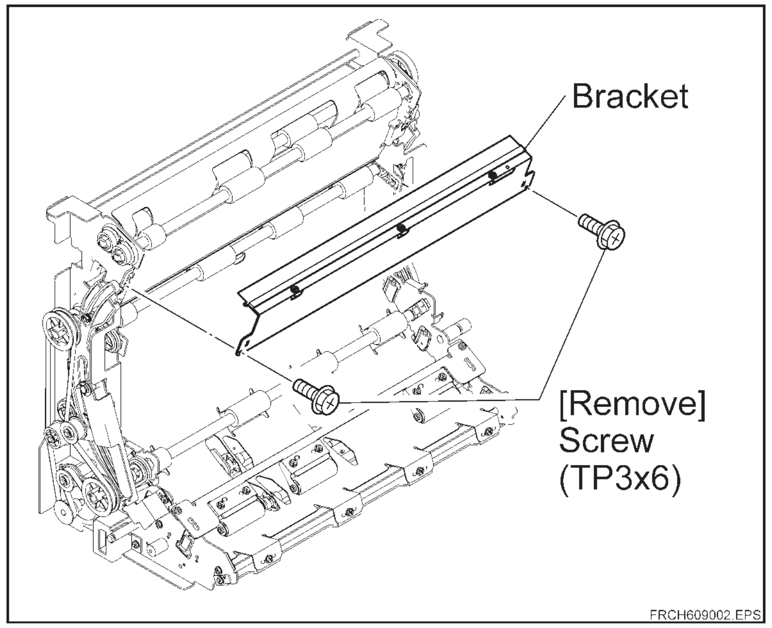
◆ **NOTE** ◆

Always support the unit on the positions indicated in the figure for this operation. If the unit is pulled out with other positions supported, components of the side-positioning conveyor unit might get damaged.

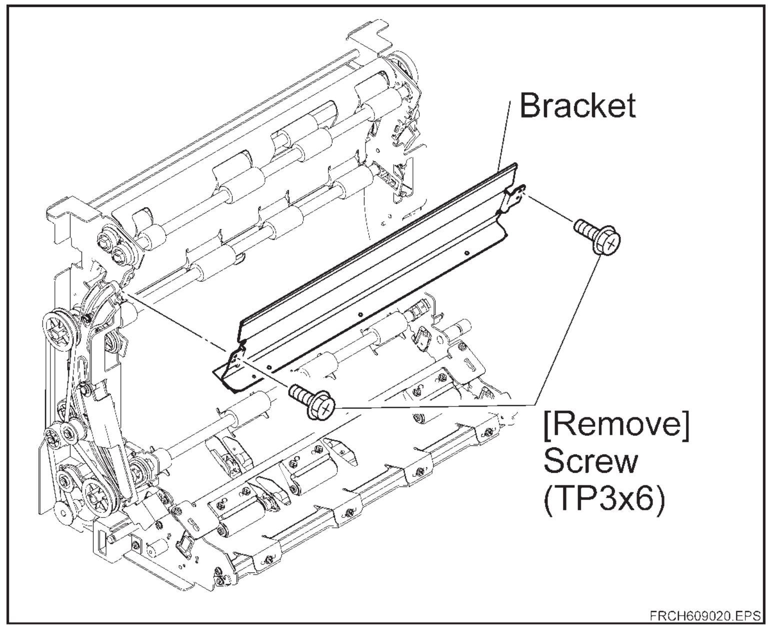

Hold here
Side-positioning conveyor unit
#1
[Hold]
#2
[Pull out straight toward you]
FRCH609018.EPS

9.2 Cleaning the Guide

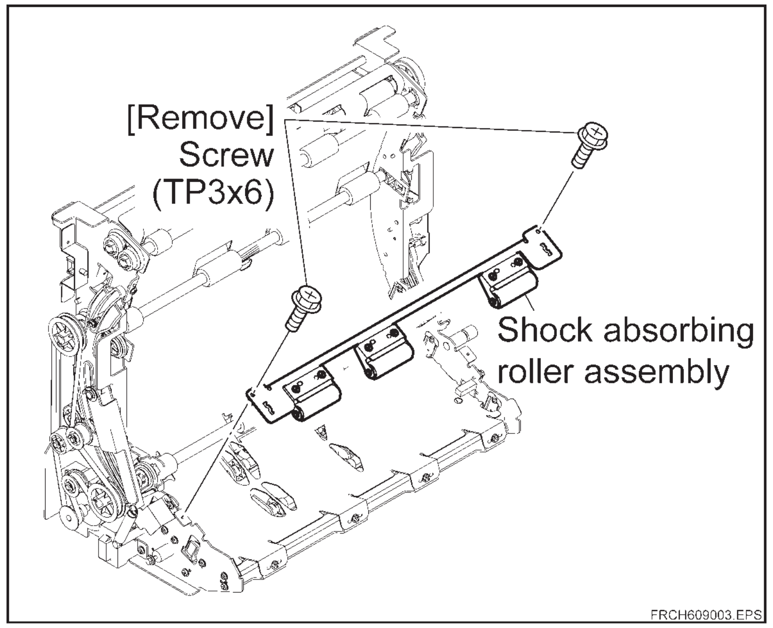
1. Remove the bracket.


Bracket
[Remove]
Screw
(TP3x6)
FRCH609002.EPS

2. Remove the bracket.


Bracket
[Remove]
Screw
(TP3x6)
FRCH609020.EPS

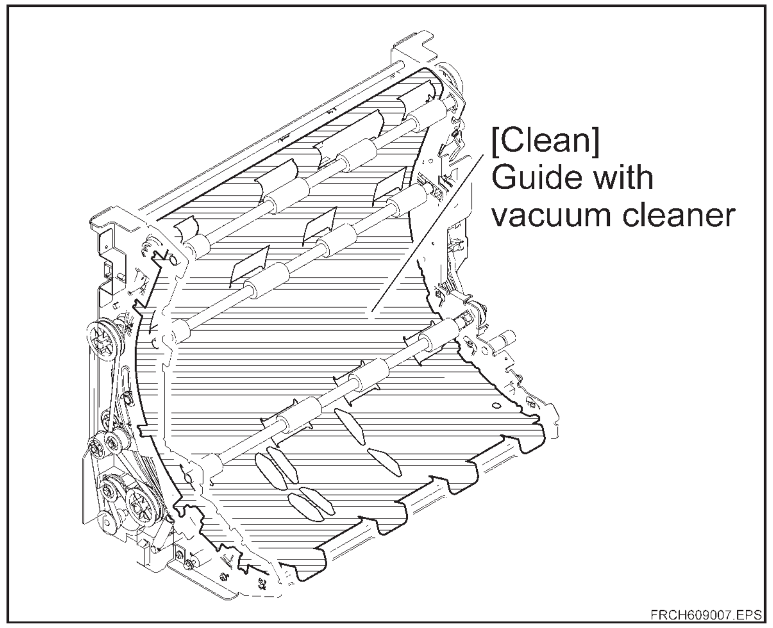
3. Remove the shock absorbing roller assembly.


[Remove]
Screw
(TP3x6)
Shock absorbing
roller assembly
FRCH609003.EPS

4. Clean the guide with a vacuum cleaner.

◆ **NOTE** ◆

Always use a vacuum cleaner for cleaning the guide. Do not use a moistened cloth.

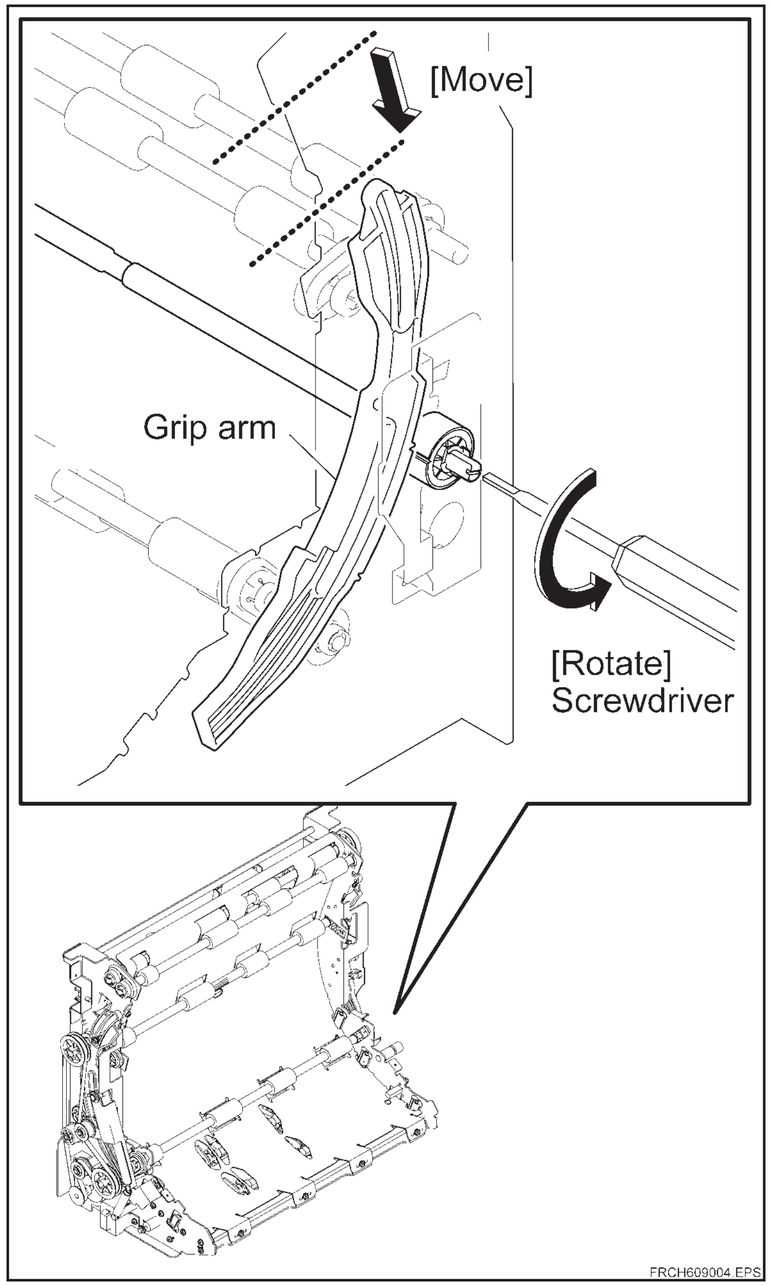

[Clean]
Guide with
vacuum cleaner
FRCH609007.EPS

9.3 Cleaning the Rubber Rollers

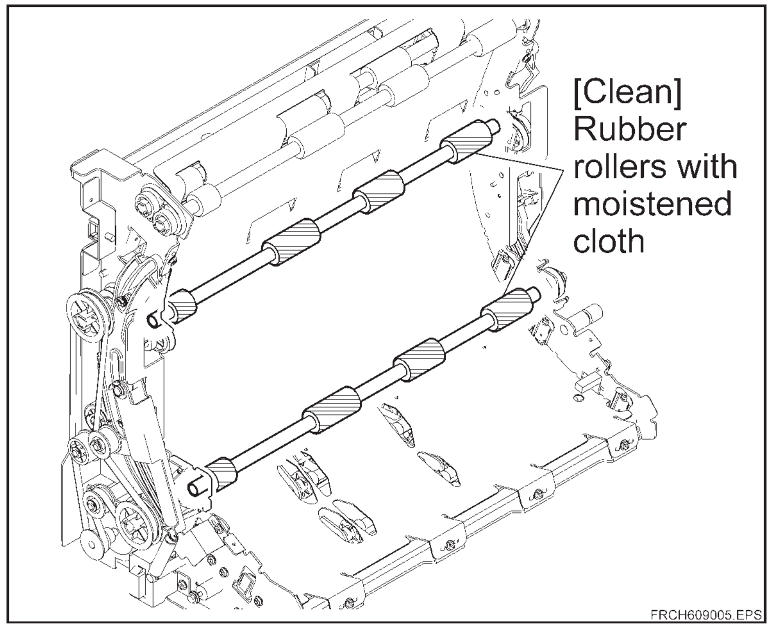
1. **Rotate the shaft with a thin-blade screwdriver, and move the grip arm to the position indicated in the figure.**

◇ REFERENCE ◇

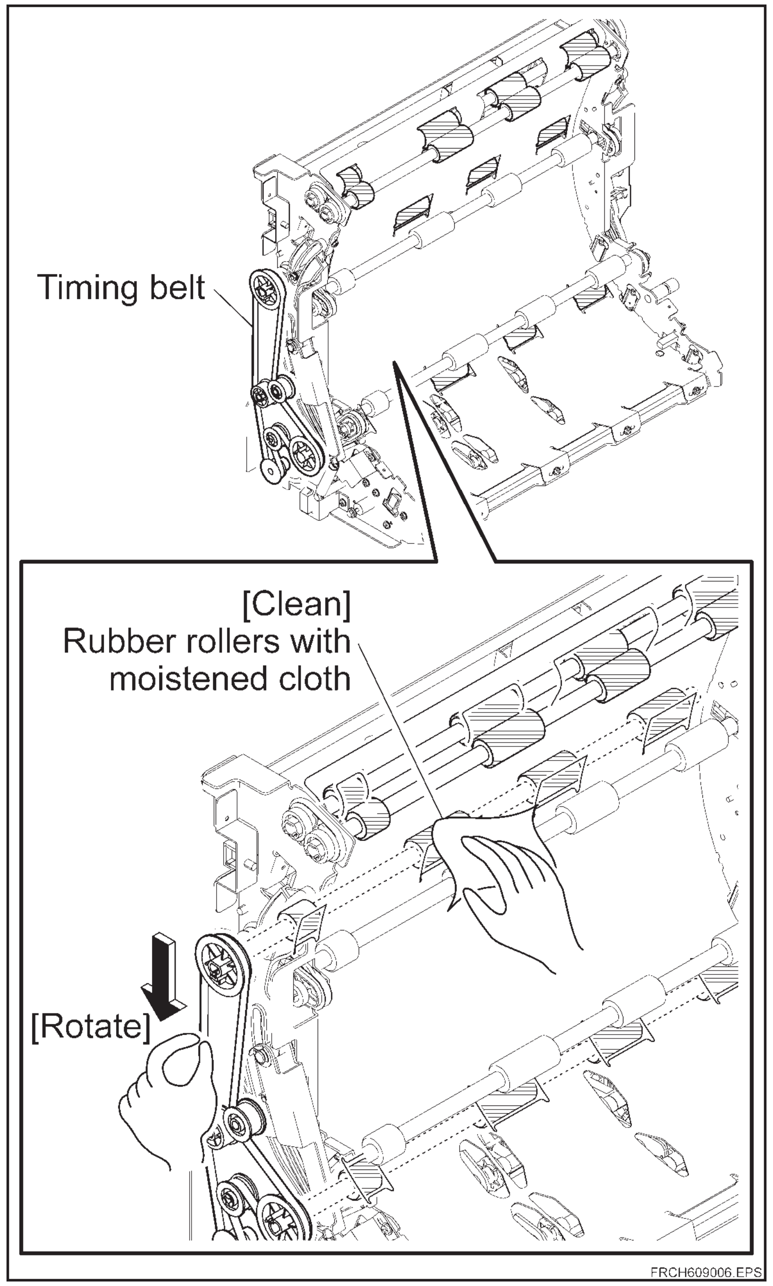
When the shaft is kept rotated by the screwdriver, the gear and the grip arm disengage, and a touching sound occurs when they re-engage. Note that this is not a failure of the machine.


[Move]
Grip arm
[Rotate]
Screwdriver
FRCH609004.EPS

2. **Clean the rubber rollers with a moistened cloth.**

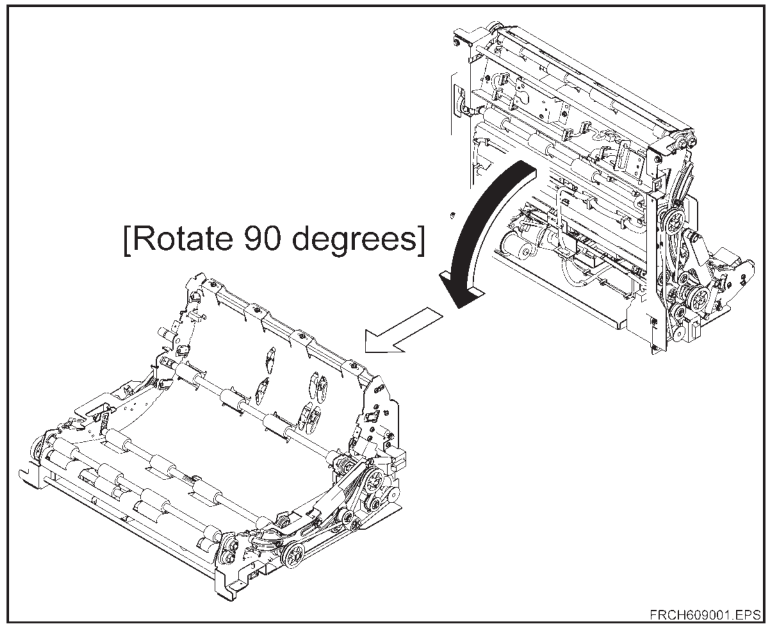

[Clean]
Rubber rollers with moistened cloth
FRCH609005.EPS

3. **Push the moistened cloth against the rubber rollers. Clean the rubber rollers while rotating the rollers via the timing belt.**

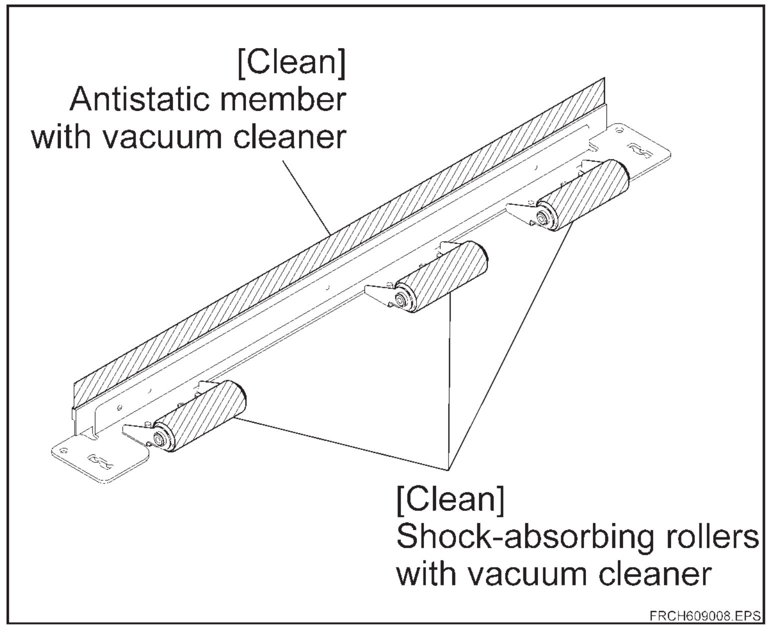

Timing belt
[Clean]
Rubber rollers with
moistened cloth
[Rotate]
FRCH609006.EPS

9.4 Cleaning the Shock-Absorbing Rollers, Antistatic Members, and Guide

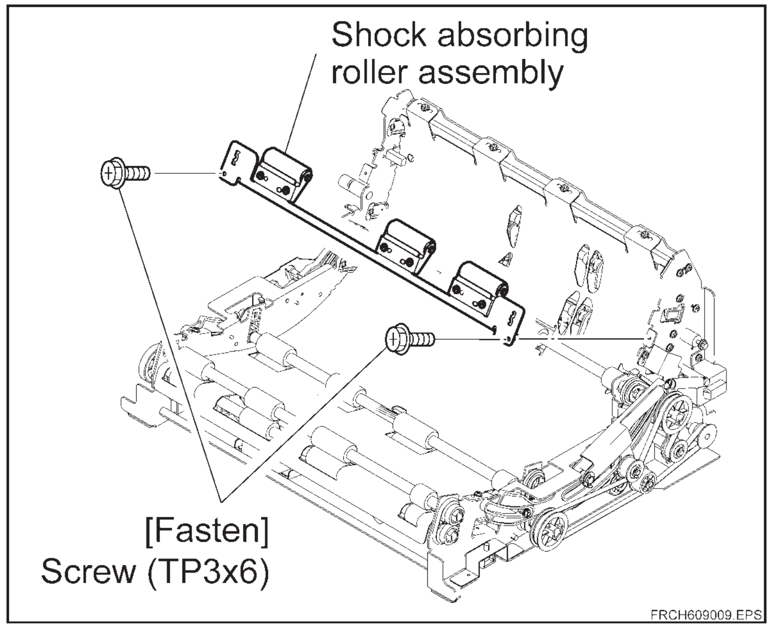
1. **Place the side-positioning conveyor unit in the orientation indicated in the figure.**


[Rotate 90 degrees]
FRCH609001.EPS

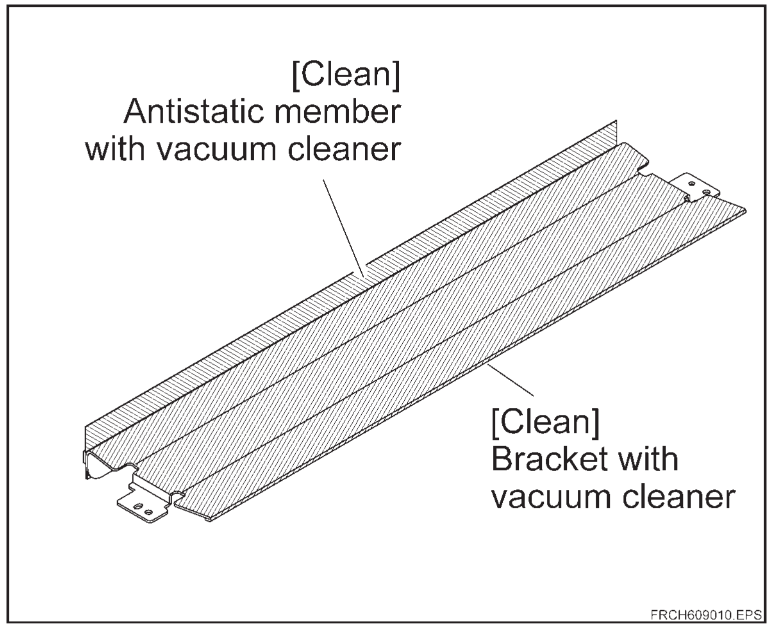
2. **Clean the shock-absorbing rollers and the antistatic member with a vacuum cleaner.**


[Clean]
Antistatic member
with vacuum cleaner
[Clean]
Shock-absorbing rollers
with vacuum cleaner
FRCH609008.EPS

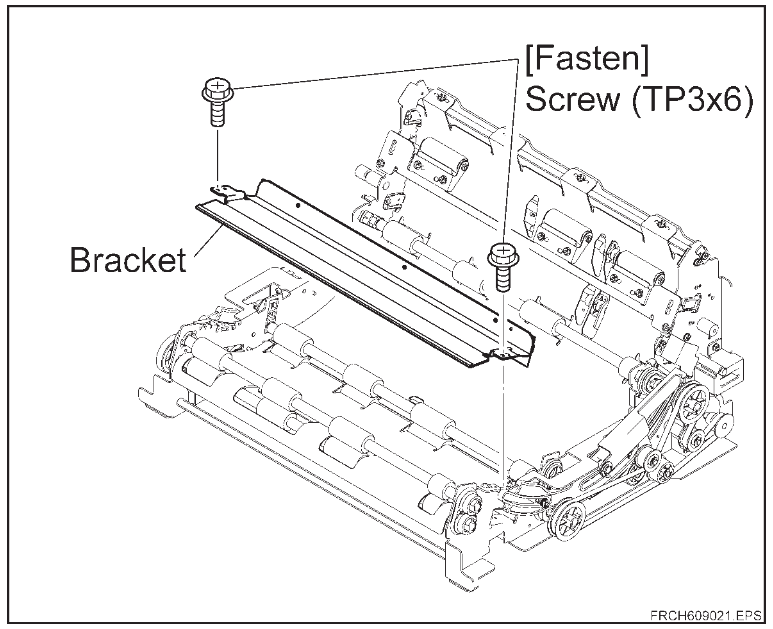
3. **Align the shock-absorbing roller assembly with the mount position while facing the antistatic member downward. Retain the assembly with the screws.**


Shock absorbing
roller assembly
[Fasten]
Screw (TP3x6)
FRCH609009.EPS

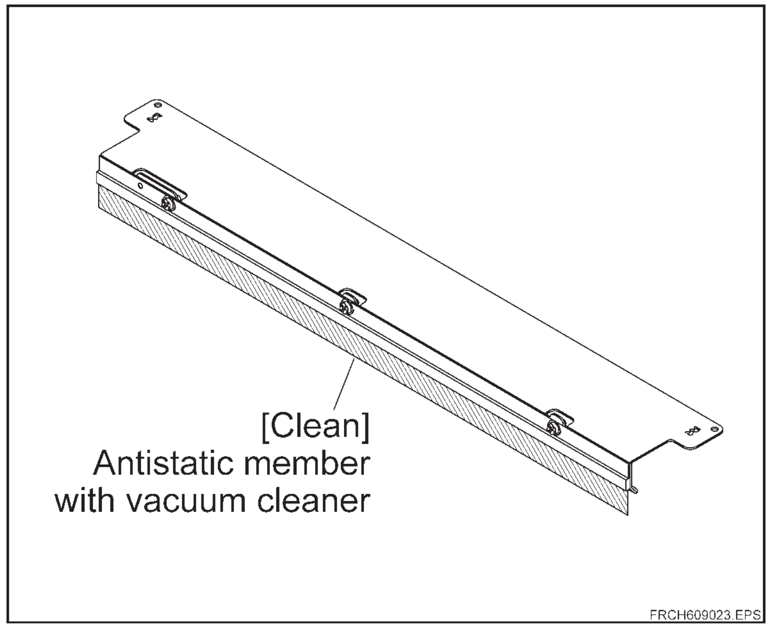
4. **Clean the bracket and the antistatic member with a vacuum cleaner.**


[Clean]
Antistatic member
with vacuum cleaner
[Clean]
Bracket with
vacuum cleaner
FRCH609010.EPS

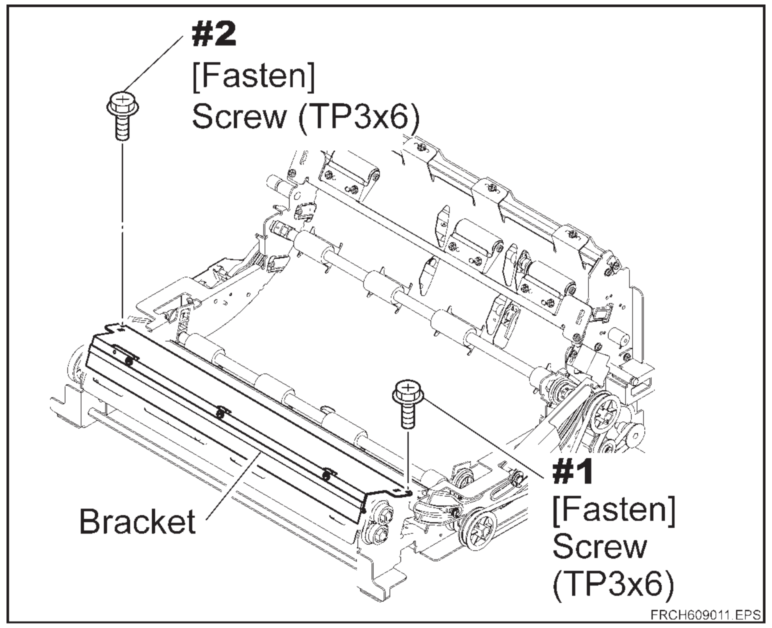
5. **Reinstall the bracket.**


[Fasten]
Screw (TP3x6)
Bracket
FRCH609021.EPS

6. **Clean the antistatic member with a vacuum cleaner.**


[Clean]
Antistatic member
with vacuum cleaner
FRCH609023.EPS

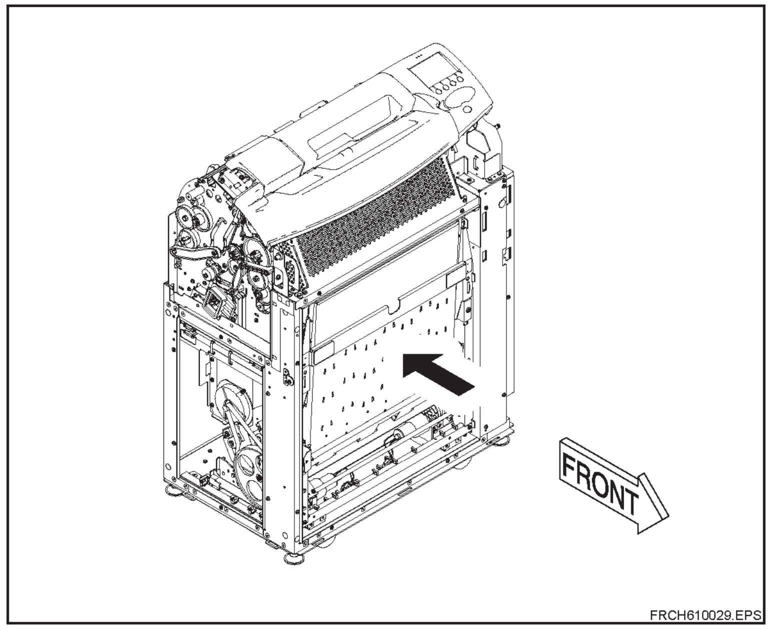
7. **Align one of sides of the bracket with the mount position, and retain it with a screw. Then align the other side with the mount position and retain it with a screw, to have the bracket retained.**


#2
[Fasten]
Screw (TP3x6)
Bracket
#1
[Fasten]
Screw
(TP3x6)
FRCH609011.EPS

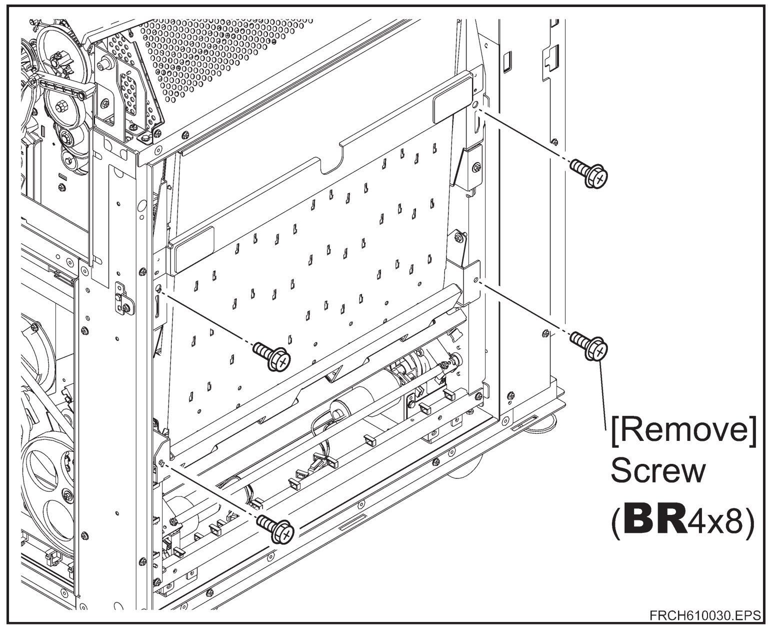
10. Subscanning Unit

10.1 Removing the Post-Reading Conveyor Guide Assembly

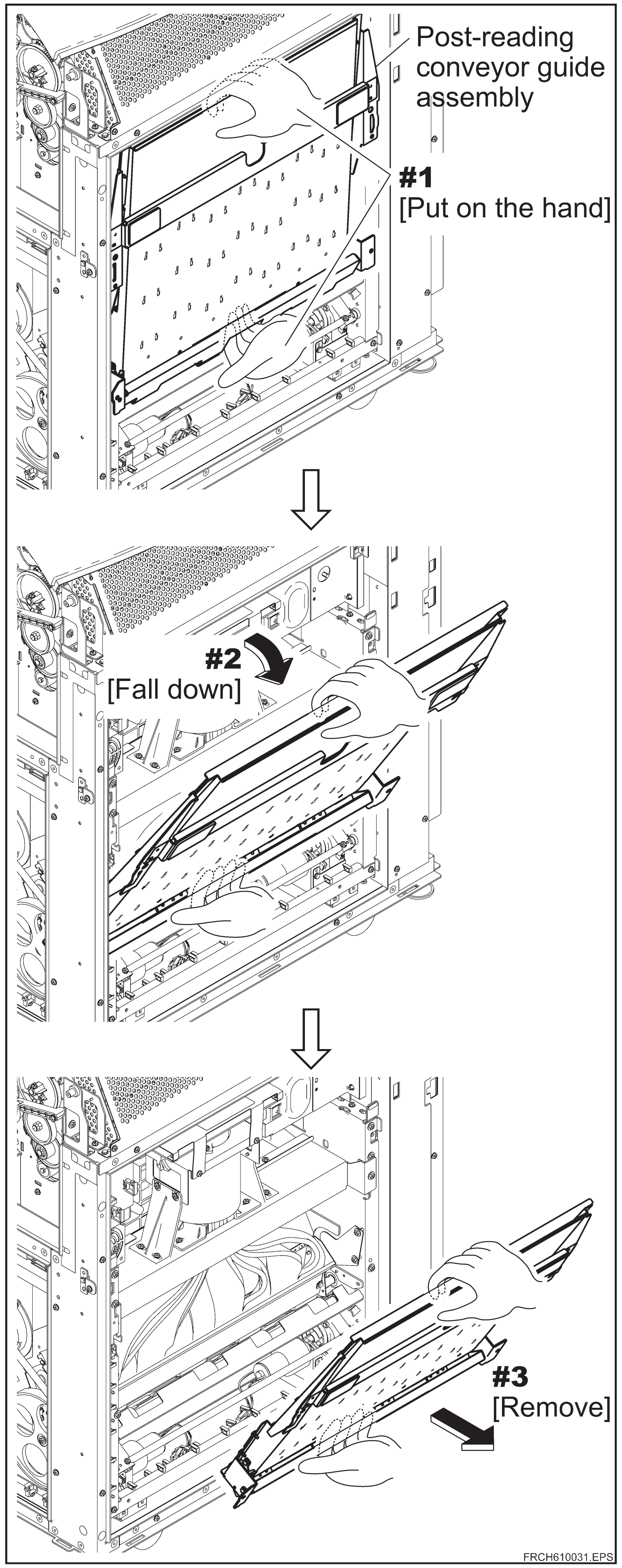
1. **Take the procedures 2 and 3 from the direction indicated by the arrow in the figure.**


FRONT
FRCH610029.EPS

2. **Remove the retaining screws of the post-reading conveyor guide assembly.**


[Remove]
Screw
(**BR**4x8)
FRCH610030.EPS

3. **Supporting the post-reading conveyor guide assembly on the position indicated in the figure, fall it down slantly and remove.**


Post-reading conveyor guide assembly
#1
[Put on the hand]
#2
[Fall down]
#3
[Remove]
FRCH610031.EPS

10.2 Removing the Light-Collecting Guide

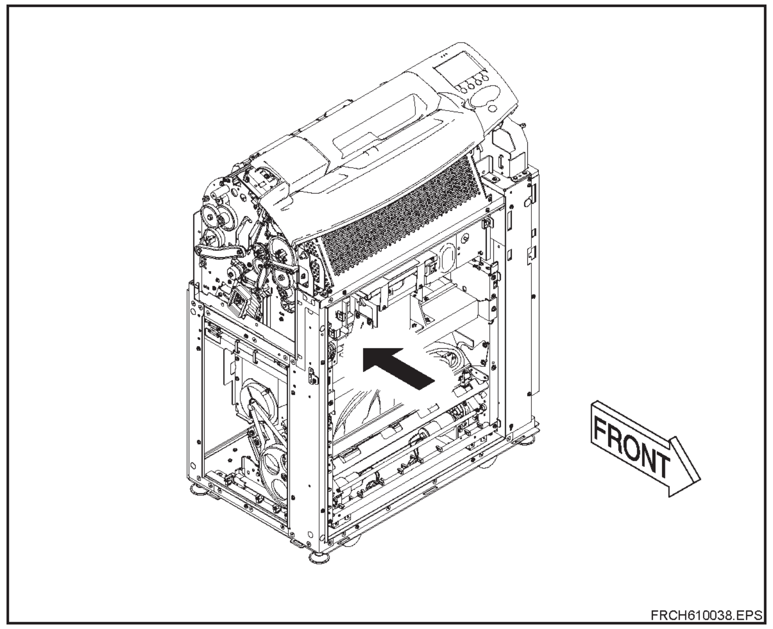
CAUTION

Never touch the light-receiving face of the light-collecting unit even when you are wearing gloves.

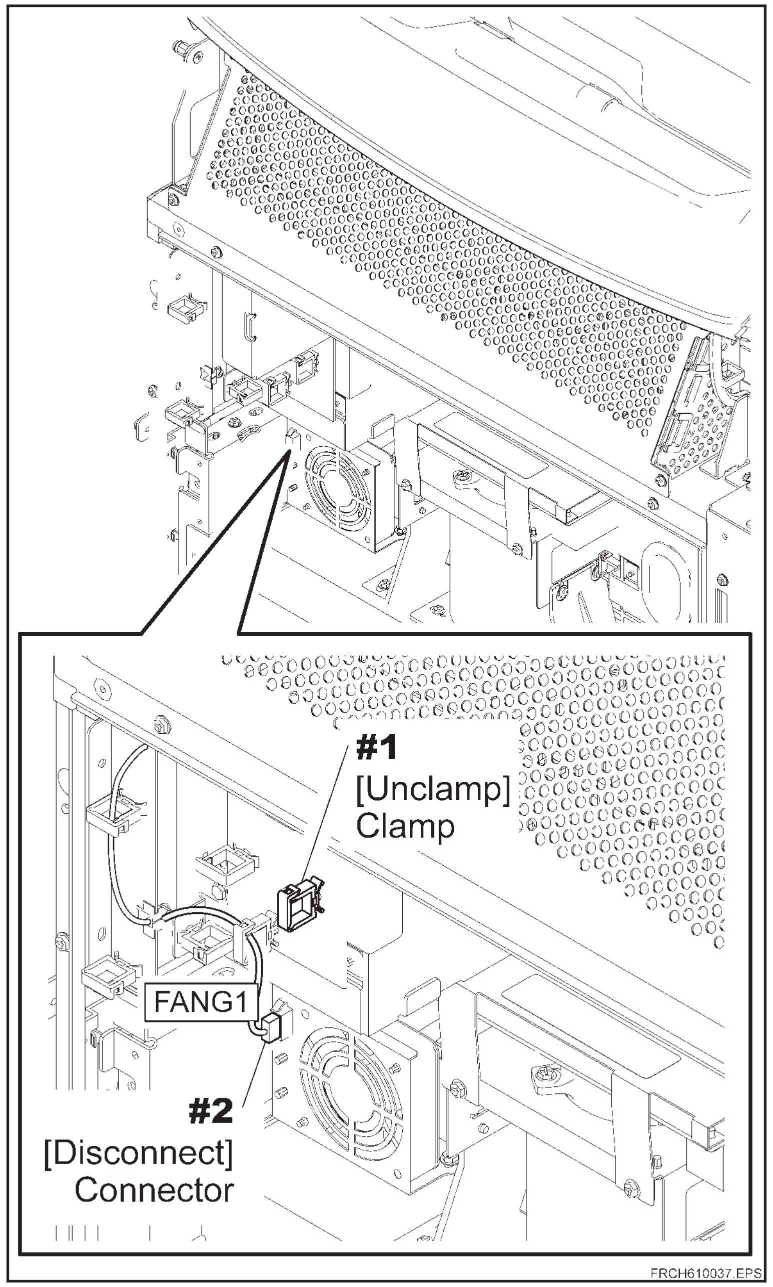
◆ ***INSTRUCTION*** ◆

When servicing the light-collecting unit, wear gloves.

1. **Take the procedures from 2 to 5 from the direction indicated by the arrow in the figure.**


FRONT
FRCH610038.EPS

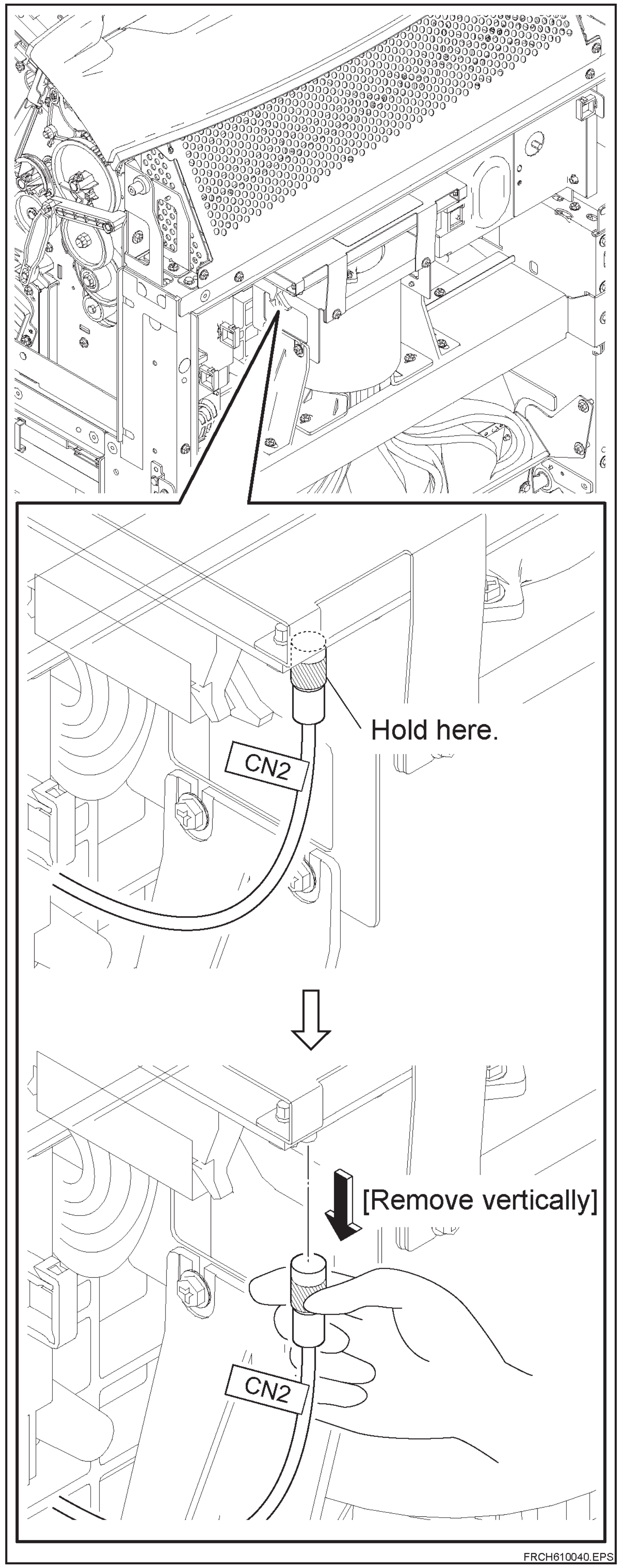
2. **Unclamp the clamp, and disconnect the connector.**


#1
[Unclamp]
Clamp
FANG1
#2
[Disconnect]
Connector
FRCH610037.EPS

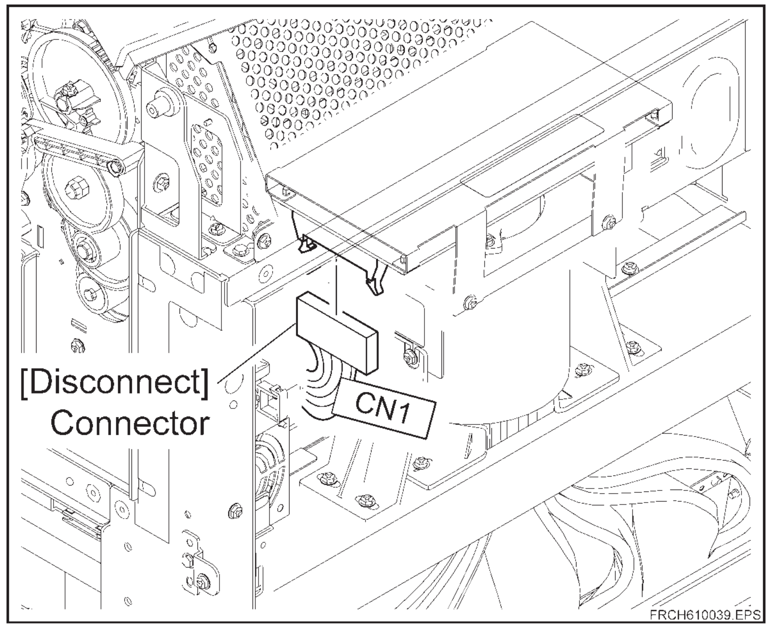
3. **Disconnect the connector while holding the shaded portion in the figure.**

◆ NOTES ◆

- *Be sure to hold the specified portion to disconnect the connector. Otherwise, the cable may get damaged.*
- *Disconnect the connector vertically. If it is disconnected slantly, the connector on the board may get damaged.*
- *As the working space is small, exercise care not to get injured by peripheral components when disconnecting the connector.*


Hold here.
CN2
[Remove vertically]
CN2
FRCH610040.EPS

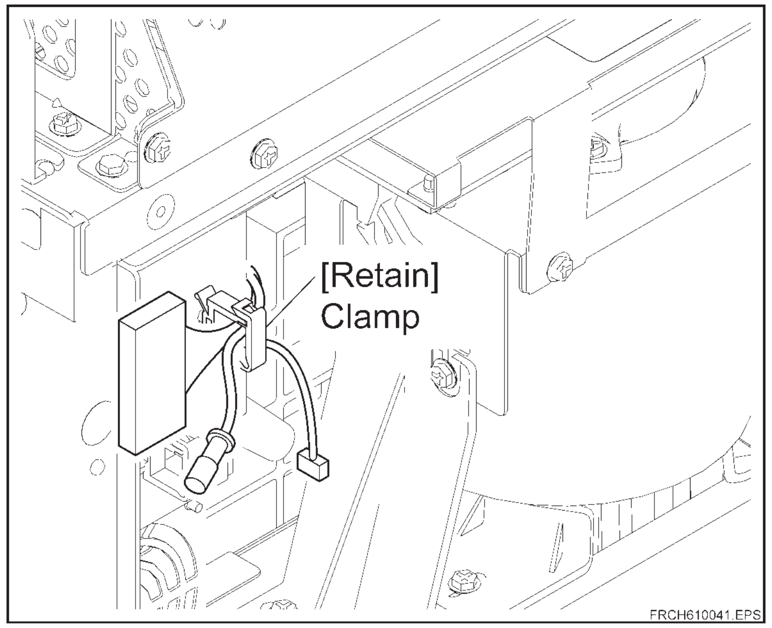
4. **Disconnect the connector.**


[Disconnect]
Connector
CN1
FRCH610039.EPS

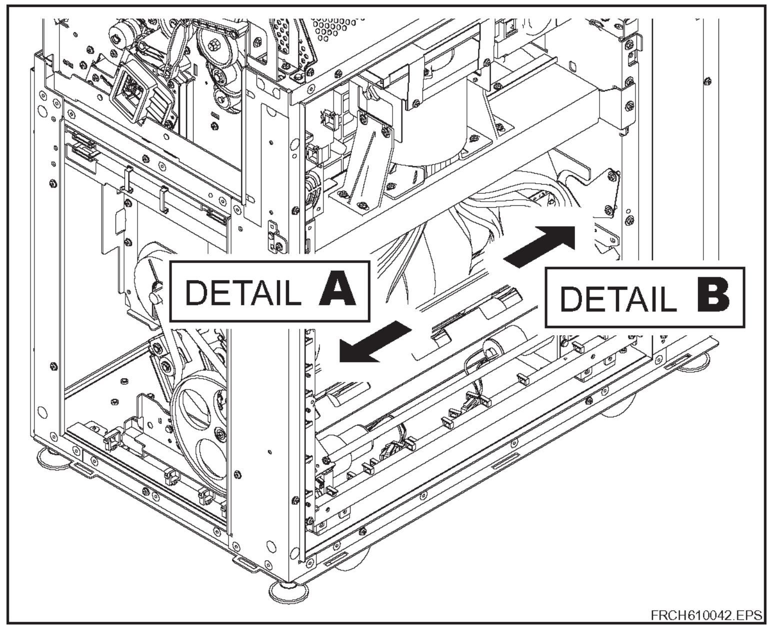
5. **Retain the three cables removed in the procedures 2 to 4 with the clamp for the protection of the cables.**

◆ NOTE ◆

Be sure to retain the cables with the clamp. Otherwise, the cable and the connector might get caught when removing/reinstalling the light-collecting guide.


[Retain]
Clamp
FRCH610041.EPS

6. **Take the procedures 7 and 8 from the direction indicated by the arrow in the figure.**

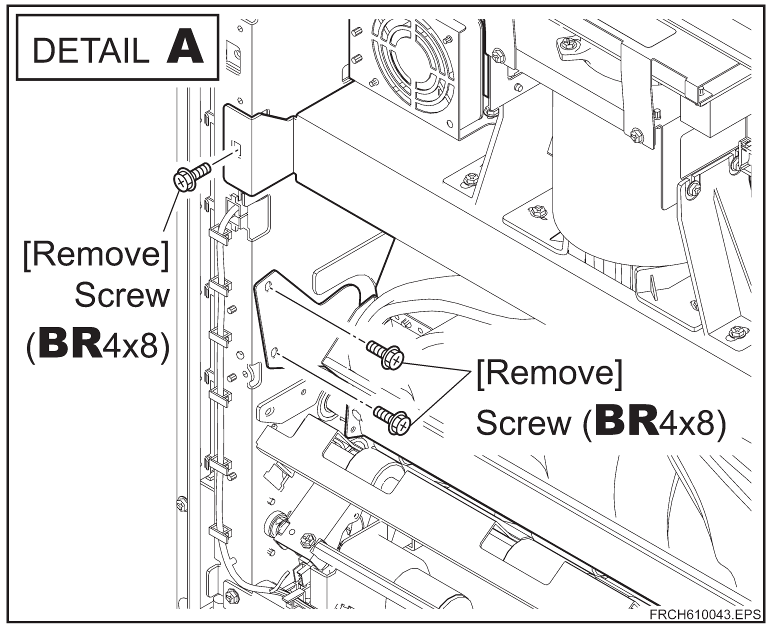

DETAIL A
DETAIL B

FRCH610042.EPS

7. **Remove the retaining screws of the light-collecting guide from the direction instructed in DETAIL A.**

◆ ***NOTE*** ◆

Exercise care not to damage the acrylic part of the light-collecting guide when removing the screws.

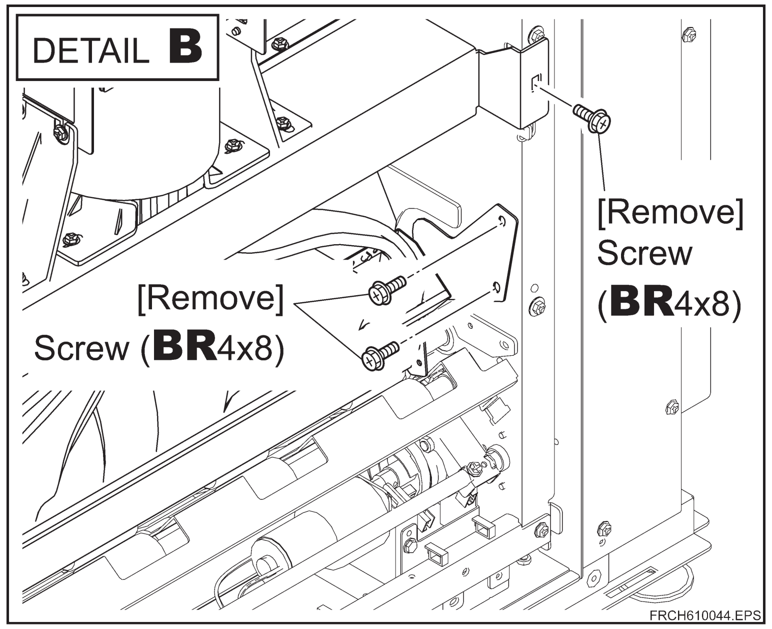

DETAIL A
[Remove]
Screw
(BR4x8)
[Remove]
Screw (BR4x8)

FRCH610043.EPS

8. **Remove the retaining screws of the light-collecting guide from the direction instructed in DETAIL B.**

◆ ***NOTE*** ◆

Exercise care not to damage the acrylic part of the light-collecting guide when removing the screws.

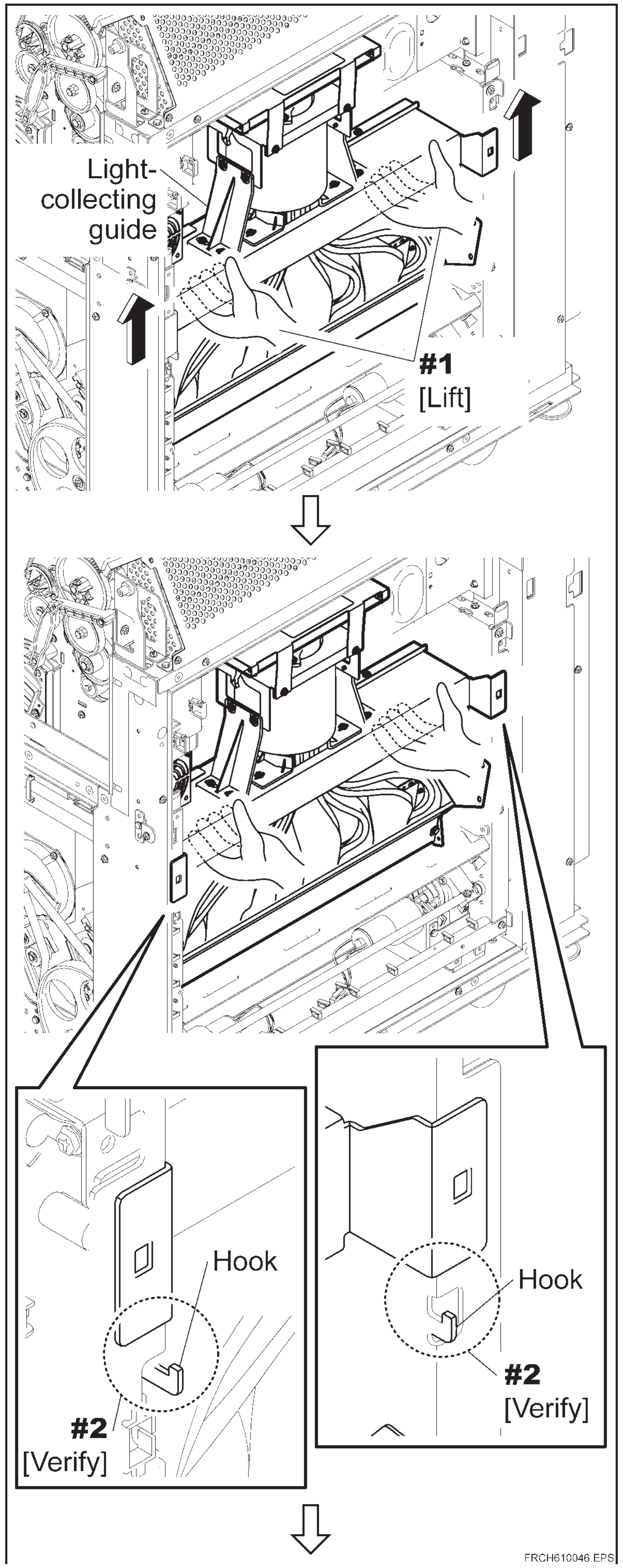

DETAIL B
[Remove]
Screw (BR4x8)
[Remove]
Screw
(BR4x8)

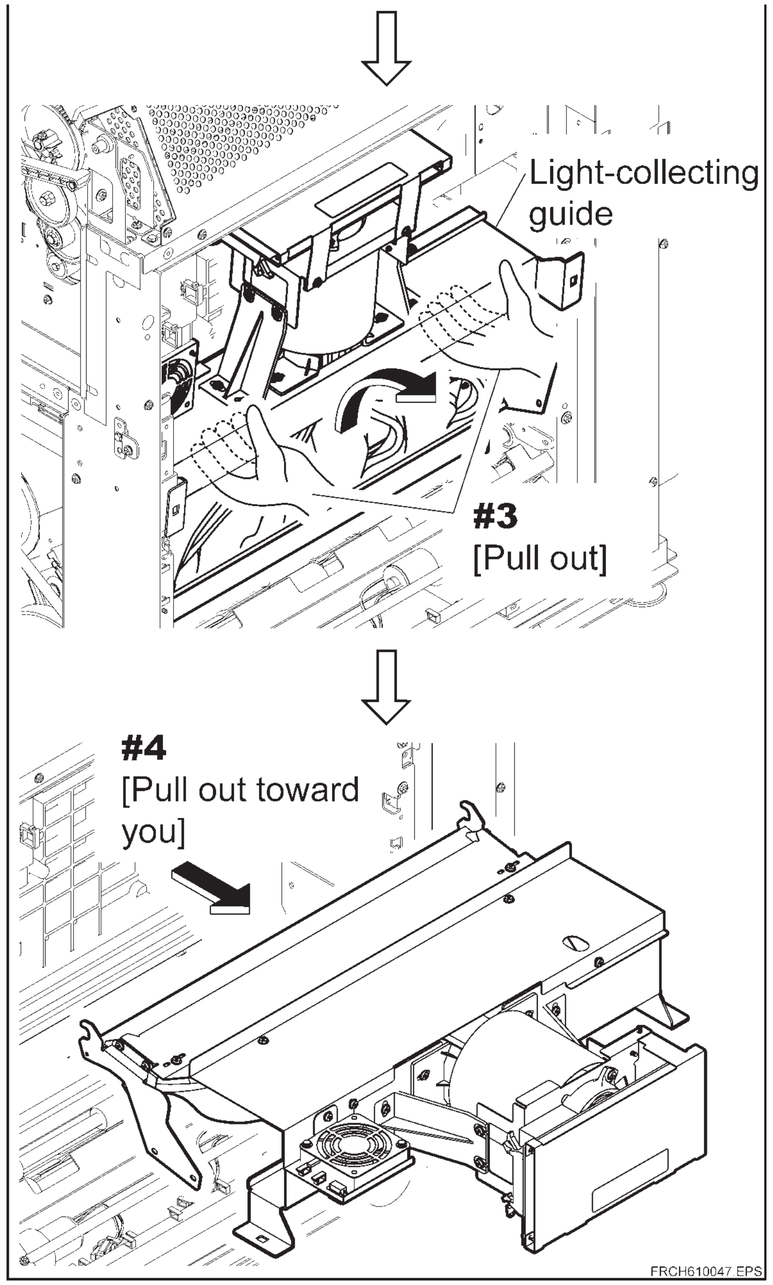
FRCH610044.EPS

9. **Supporting the light-collecting guide on the positions indicated in the figure, lift the guide. Check to make sure that the light-collecting guide bracket is disengaged from the hook on the side plate of the subscanning unit, and then pull out to remove the light-collecting guide toward you.**

◆ NOTE ◆

Always check to make sure that the light-collecting guide bracket is disengaged from the hook on the side plate of the subscanning unit before removing the light-collecting guide. Otherwise, the tip of the light-collecting guide might get damaged.

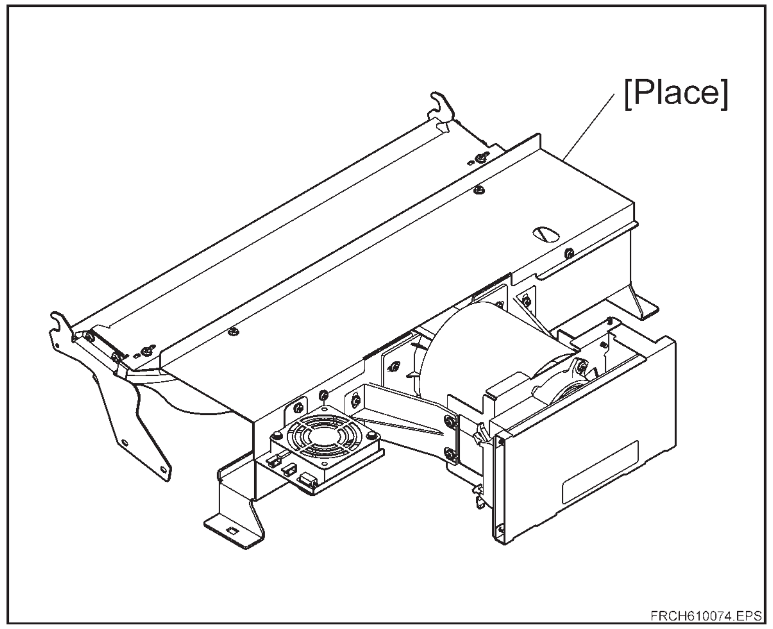

Light-collecting guide
#1
[Lift]
Hook
#2
[Verify]
Hook
#2
[Verify]
FRCH610046.EPS


Light-collecting guide
#3
[Pull out]
#4
[Pull out toward you]
FRCH610047.EPS

10. **Place the light-collecting guide in the orientation indicated in the figure.**

◆ NOTE ◆

Be sure to place the light-collecting guide in the orientation indicated in the figure. If placed reversely, load may be applied to the adhesive part of the photomultiplier, causing the light-collecting guide to get damaged.


[Place]
FRCH610074.EPS

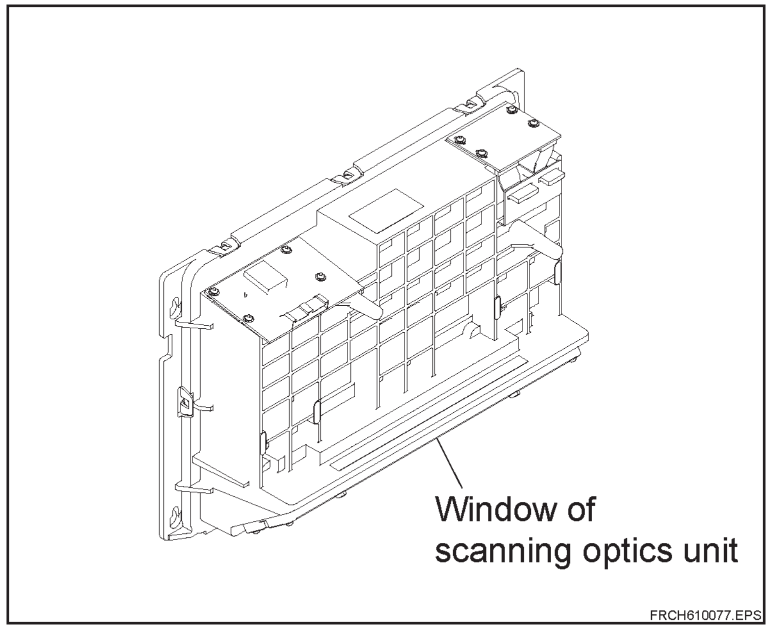
10.3 Removing the Scanning Optics Unit

CAUTION

When servicing the scanning optics unit, be sure to wear an anti-static wristband to ground your body. If your body is not grounded, static electricity built on your body may cause damage to electronic parts on the board.

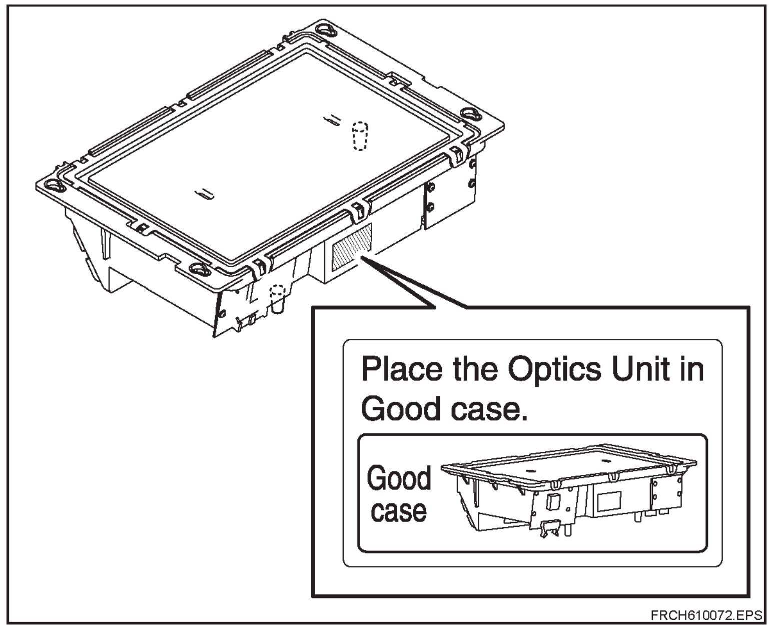
CAUTION

Never touch the window of the scanning optics unit. If fingerprints or the like are left on the window, the scanning optics unit must be replaced.


Window of
scanning optics unit
FRCH610077.EPS

◆ NOTE ◆

Place the scanning optics unit in the orientation as shown in the figure, according to the label indicating how to place the scanning optics unit.


Place the Optics Unit in Good case.
Good
case
FRCH610072.EPS

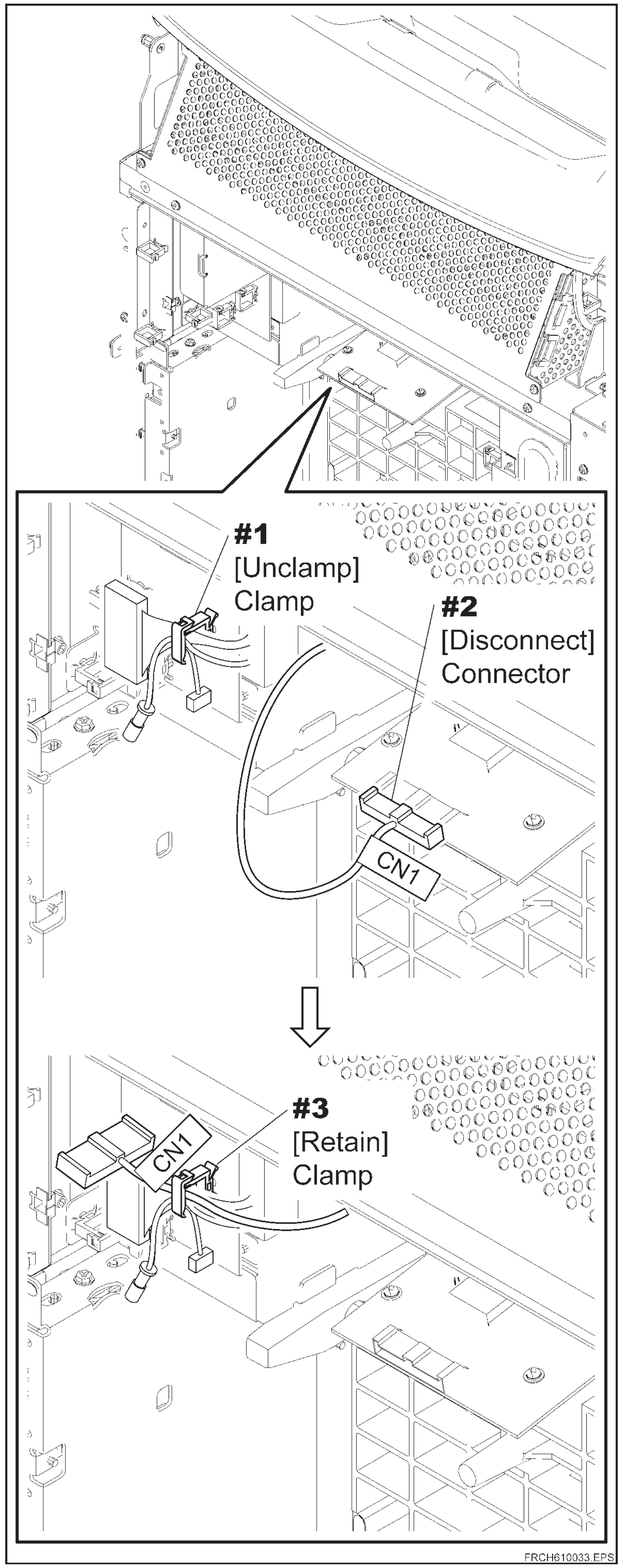
◆ INSTRUCTION ◆

Do not remove the top cover of the scanning optics unit.

1. **Unclamp the clamp, and disconnect the connector. Retain the cables with the clamp for the protection of the cable.**

◆ NOTE ◆

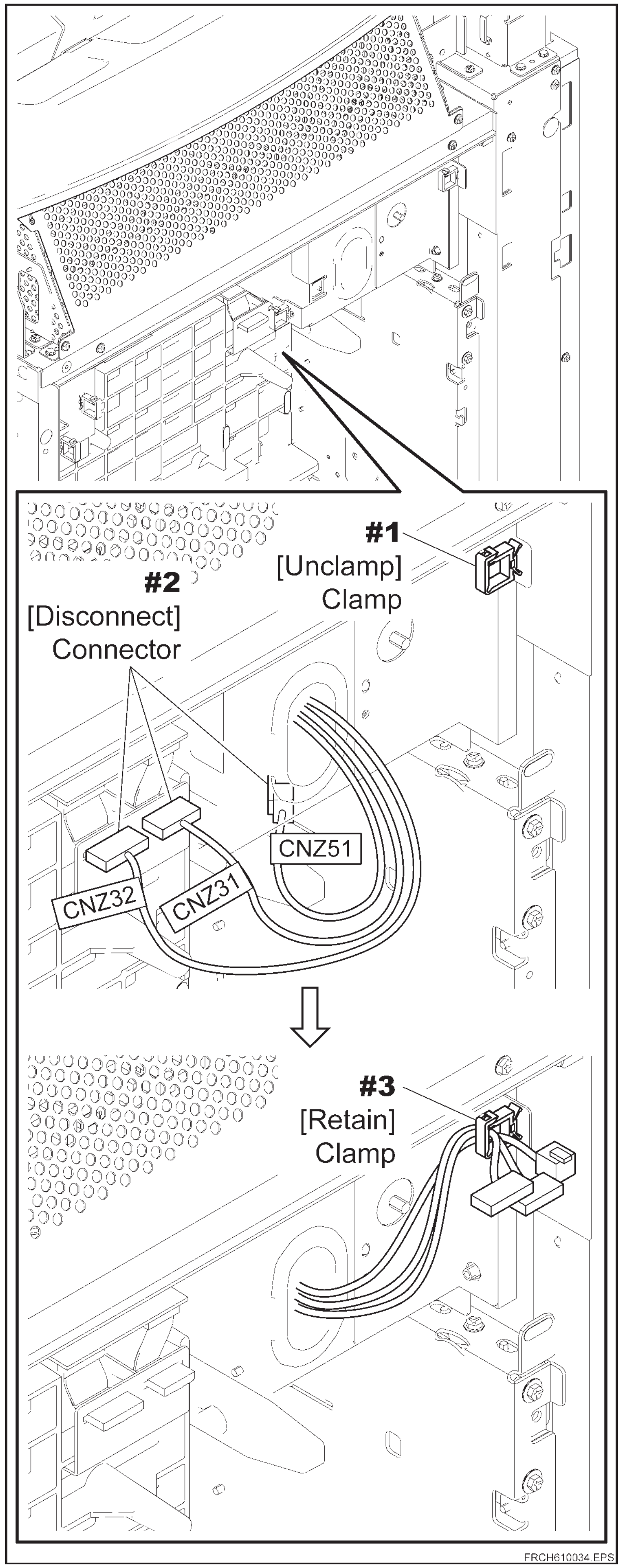
Be sure to retain the cables with the clamp. Otherwise, the cable and the connector might get caught when removing/reinstalling the scanning optics unit.


#1
[Unclamp]
Clamp
#2
[Disconnect]
Connector
CN1
CN1
#3
[Retain]
Clamp
FRCH610033.EPS

2. **Unclamp the clamp, and disconnect the connector. Retain the cable with the clamp for its protection.**

◆ NOTE ◆

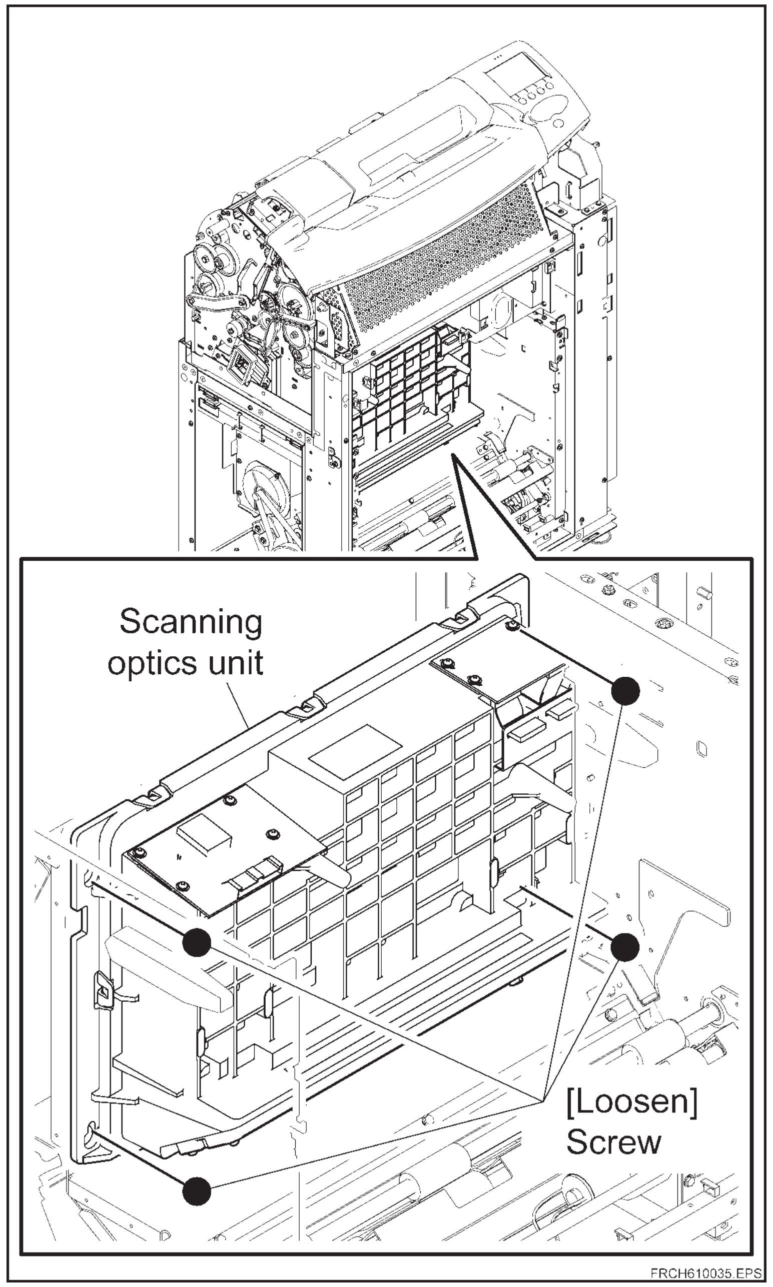
Be sure to retain the cables with the clamp. Otherwise, the cable and the connector might get caught when removing/reinstalling the scanning optics unit.


#1
[Unclamp]
Clamp
#2
[Disconnect]
Connector
CNZ51
CNZ32
CNZ31
#3
[Retain]
Clamp
FRCH610034.EPS

3. **Loosen the retaining screws of the scanning optics unit.**

◆ NOTE ◆

Just loosen the screws which retain the scanning optics unit, but do not remove them.


Scanning
optics unit
[Loosen]
Screw
FRCH610035.EPS

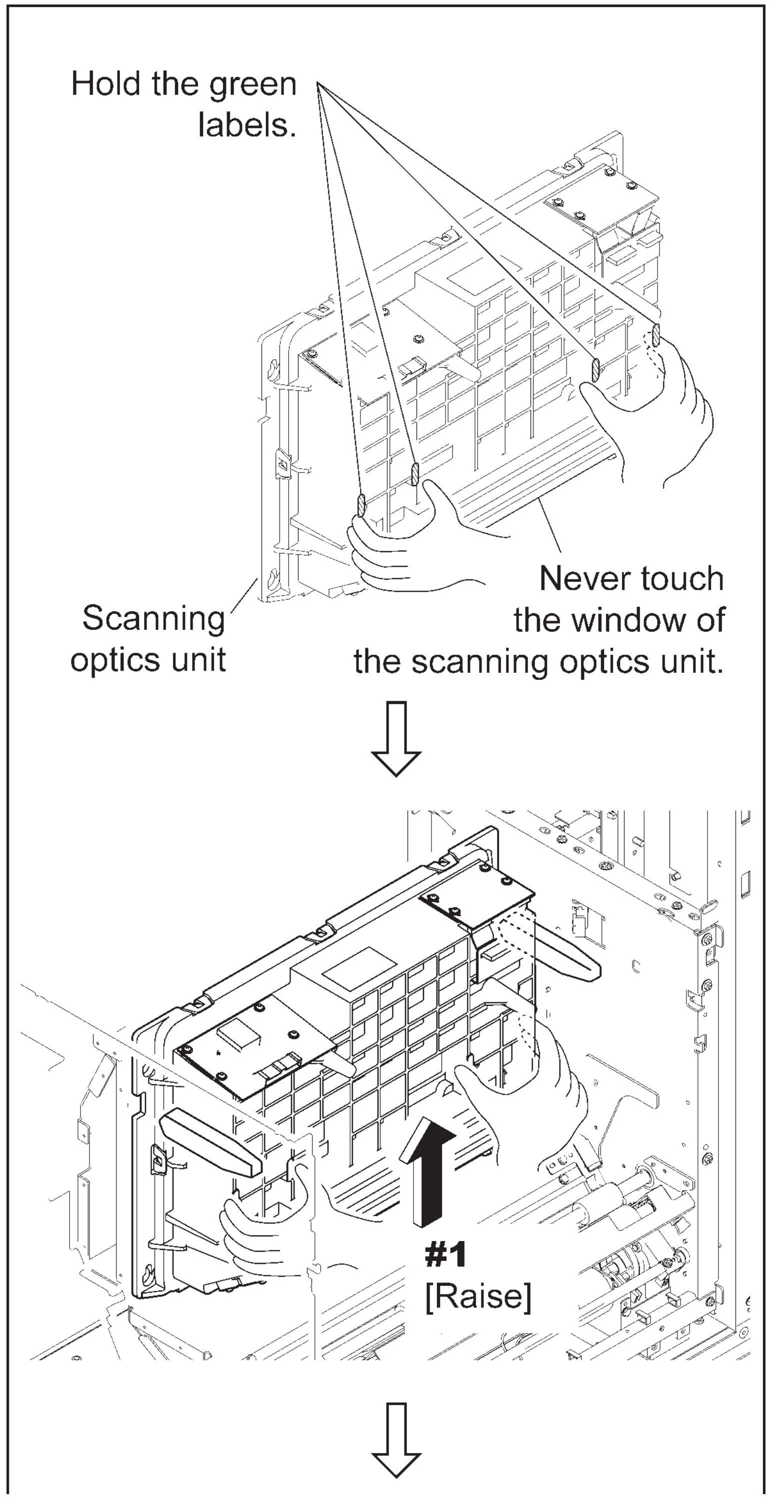
4. **Hold the green labels and raise the scanning optics unit. Make sure that holes on the scanning optics unit and screw heads are located where they do not interfere with each other. Then, pull out the scanning optics unit parallel to the guides.**

⚠ CAUTION

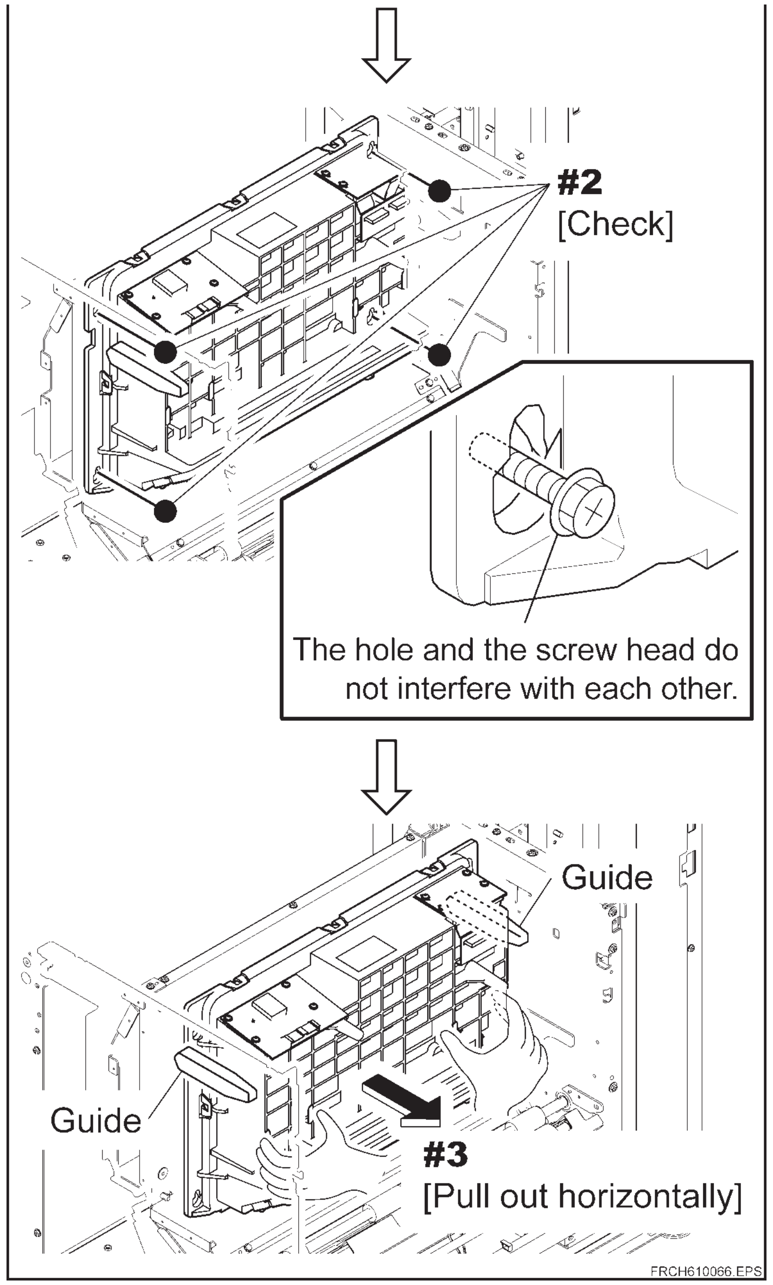
Never touch the window of the scanning optics unit. If fingerprints or the like are left on the window, the scanning optics unit must be replaced.

◆ NOTES ◆

- *Hold the green labels to remove/ reinstall the scanning optics unit.*
- *Pull out the scanning optics unit parallel to the guides. If the unit is tilted, it may drop from the guides and result in damage of peripheral components or sensors.*


Hold the green labels.
Scanning optics unit
Never touch the window of the scanning optics unit.
#1
[Raise]

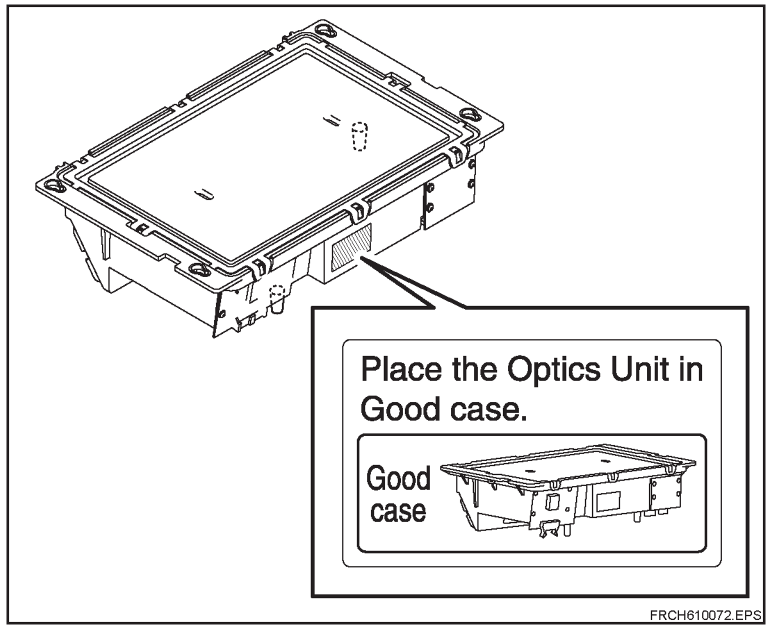
FRCH610036.EPS


#2
[Check]
The hole and the screw head do not interfere with each other.
Guide
Guide
#3
[Pull out horizontally]
FRCH610066.EPS

5. **Place the scanning optics unit in the orientation as shown in the figure.**

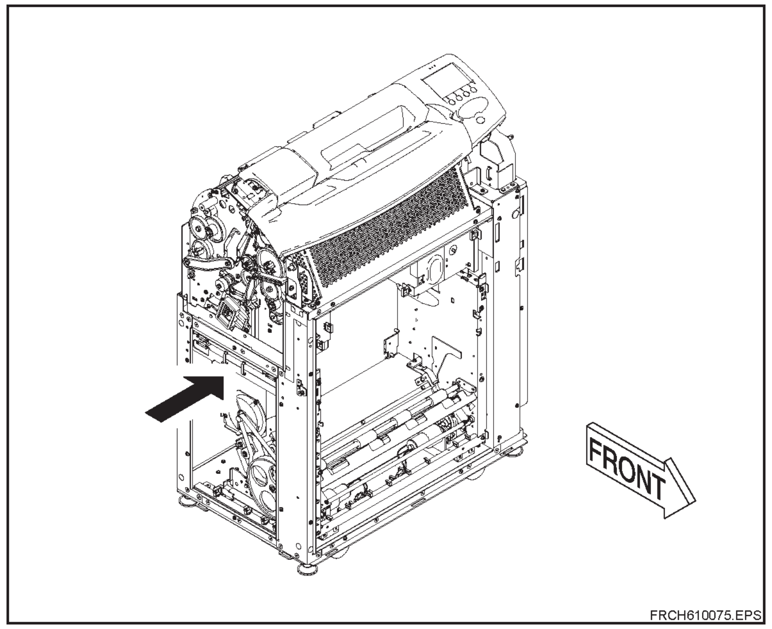
◆ NOTE ◆

Place the scanning optics unit in the orientation as shown in the figure, according to the label indicating how to place the scanning optics unit.


Place the Optics Unit in Good case.
Good case
FRCH610072.EPS

10.4 Removing the Subscanning Unit

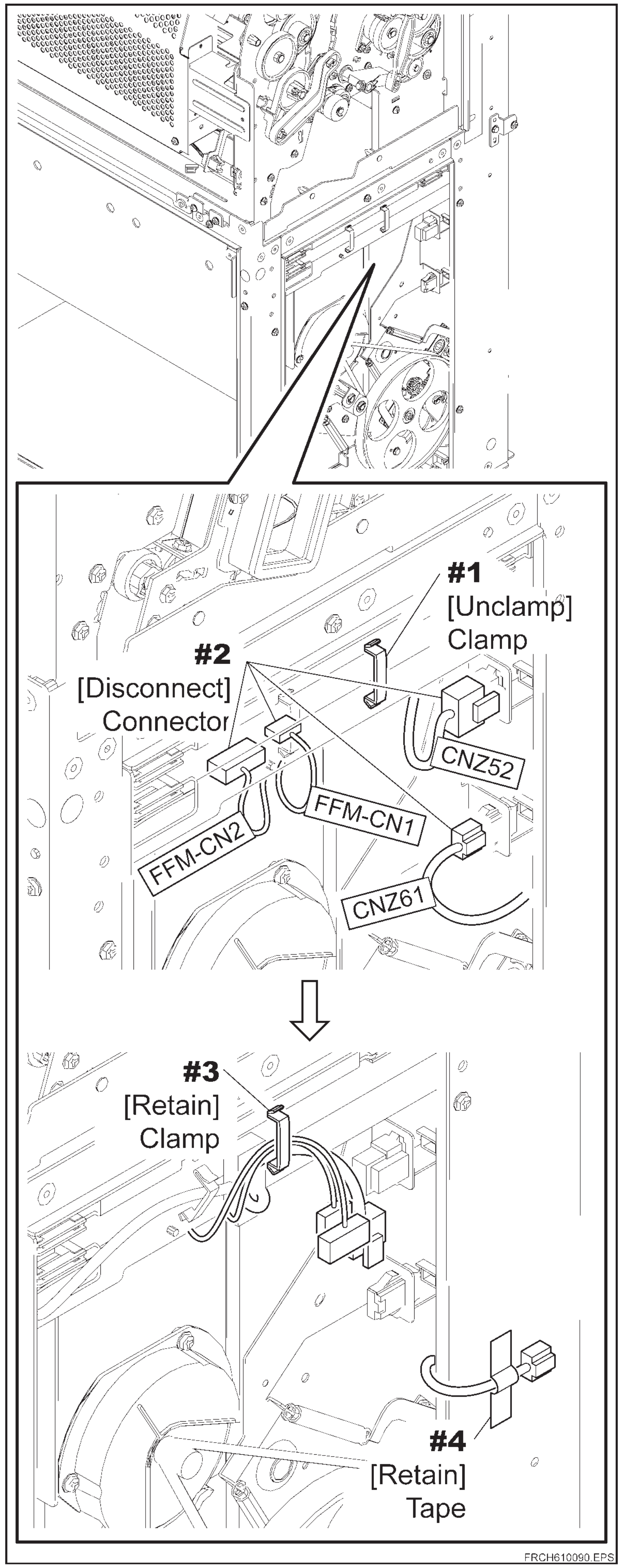
1. **Take the procedure 2 from the direction indicated by the arrow in the figure.**


FRONT
FRCH610075.EPS

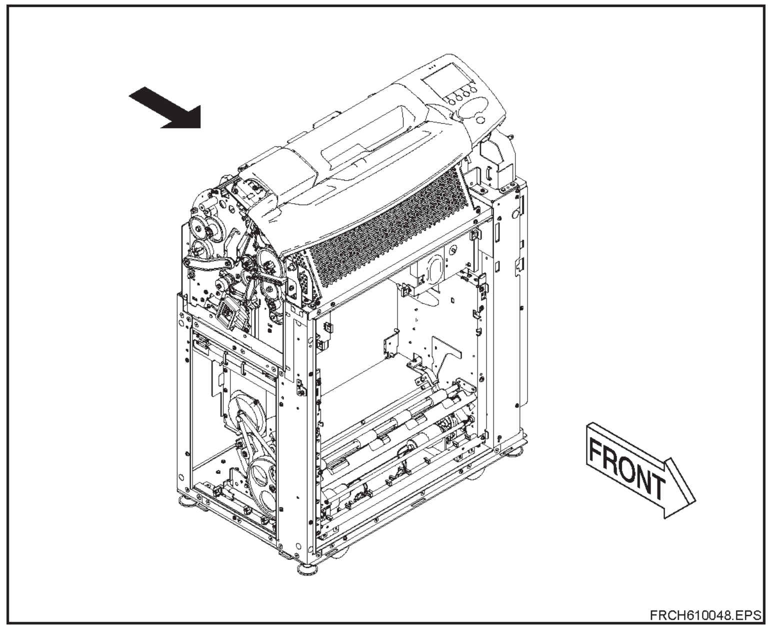
2. **Unclamp the clamp, and disconnect the connector. Retain the cables with the clamp and the tape for the protection of the cables.**

◆ NOTE ◆

Be sure to retain the cables with the clamp and the tape. Otherwise, the cable and the connector might get caught when removing/reinstalling the sub-scanning unit.


#1
[Unclamp]
Clamp
#2
[Disconnect]
Connector
CNZ52
FFM-CN1
FFM-CN2
CNZ61
#3
[Retain]
Clamp
#4
[Retain]
Tape
FRCH610090.EPS

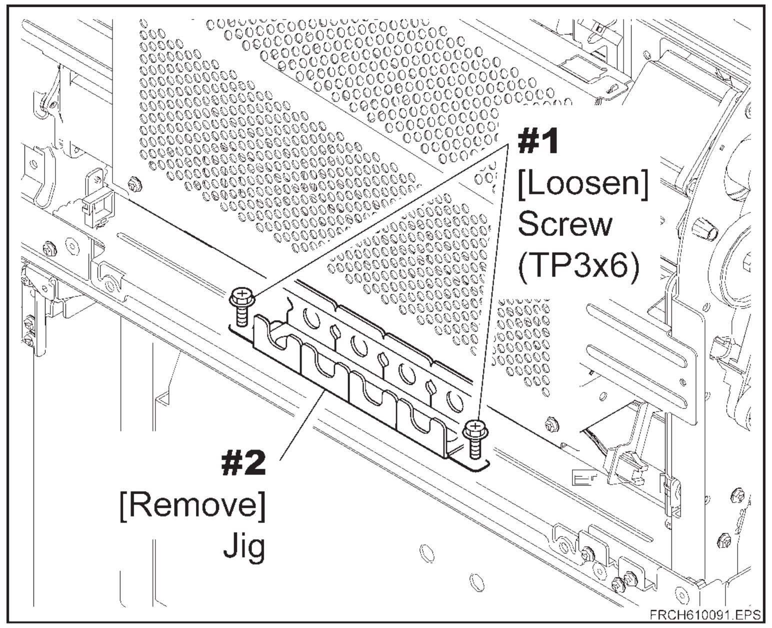
3. **Take the procedures 4 and 5 from the direction indicated by the arrow in the figure.**


FRONT
FRCH610048.EPS

4. **Loosen the screws and then remove the jig.**

◇ *REFERENCE* ◇

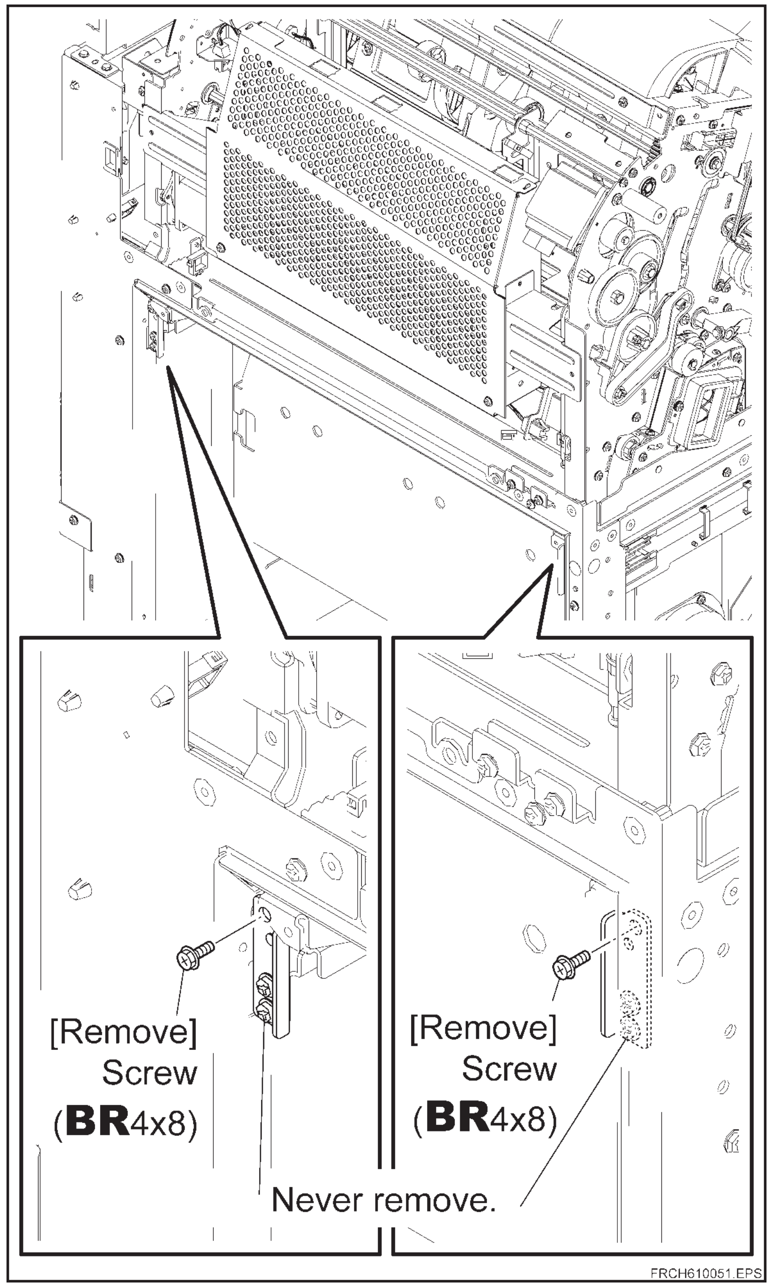
After subscanning unit removal, mount the removed jig on the vibration-proof rubber assembly.


#1
[Loosen]
Screw
(TP3x6)
#2
[Remove]
Jig
FRCH610091.EPS

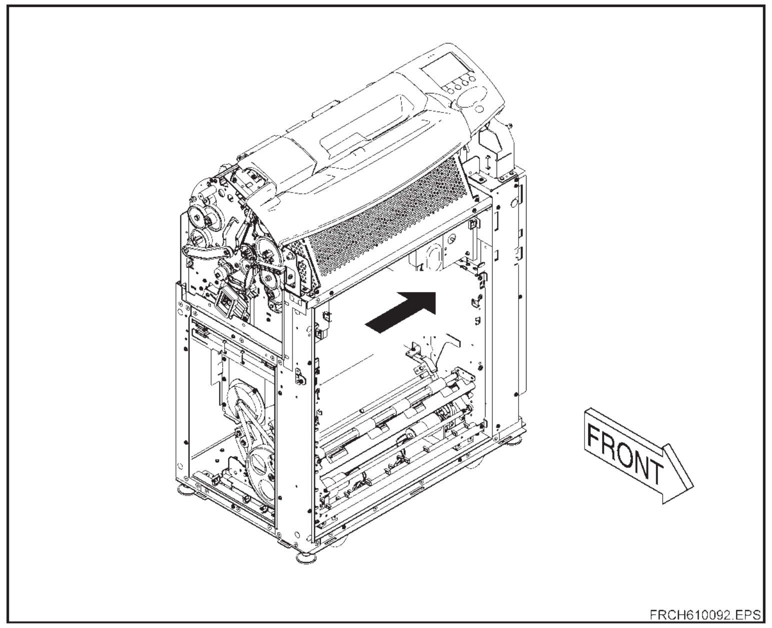
5. **Remove the retaining screws of the subscanning unit.**

CAUTION

Never remove red painted screws.


[Remove]
Screw
(**BR**4x8)
[Remove]
Screw
(**BR**4x8)
Never remove.
FRCH610051.EPS

6. **Take the procedure 7 from the direction indicated by the arrow in the figure.**


FRONT
FRCH610092.EPS

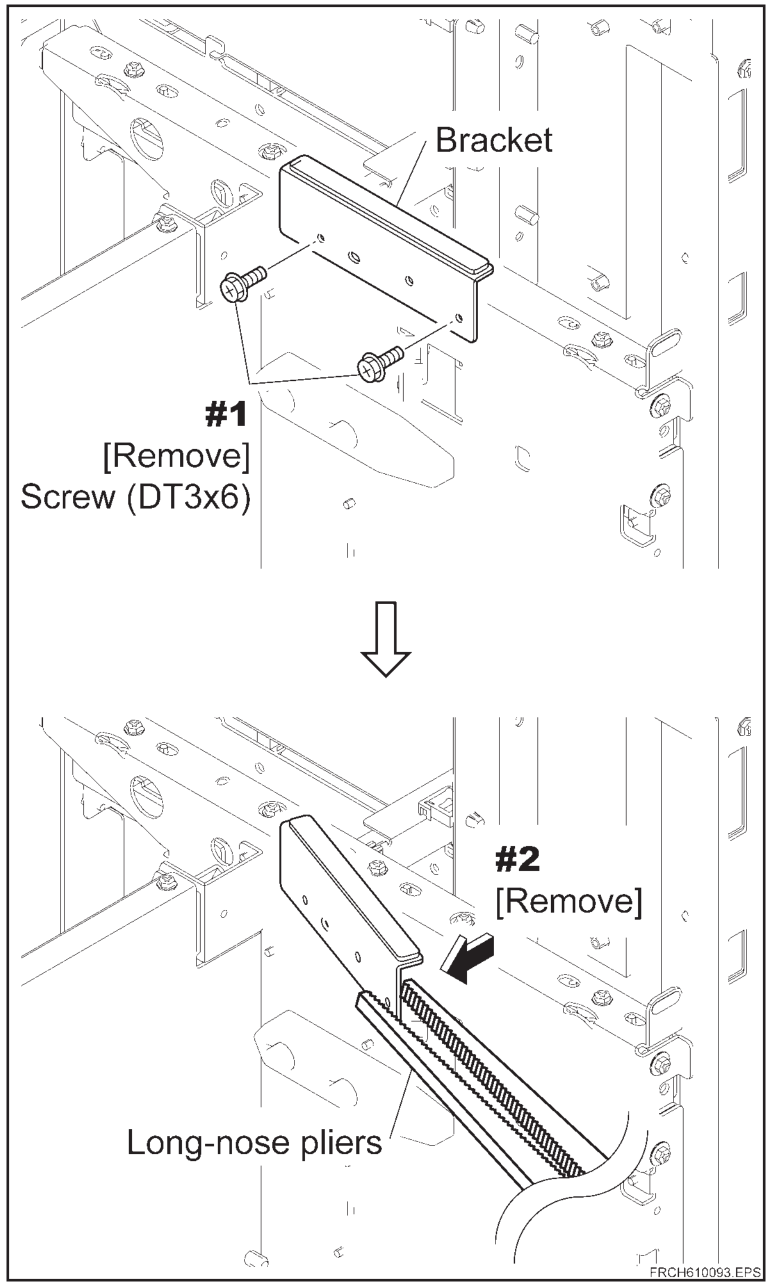
7. **Remove the screws. With long-nose pliers, remove the bracket.**

◆ NOTE ◆

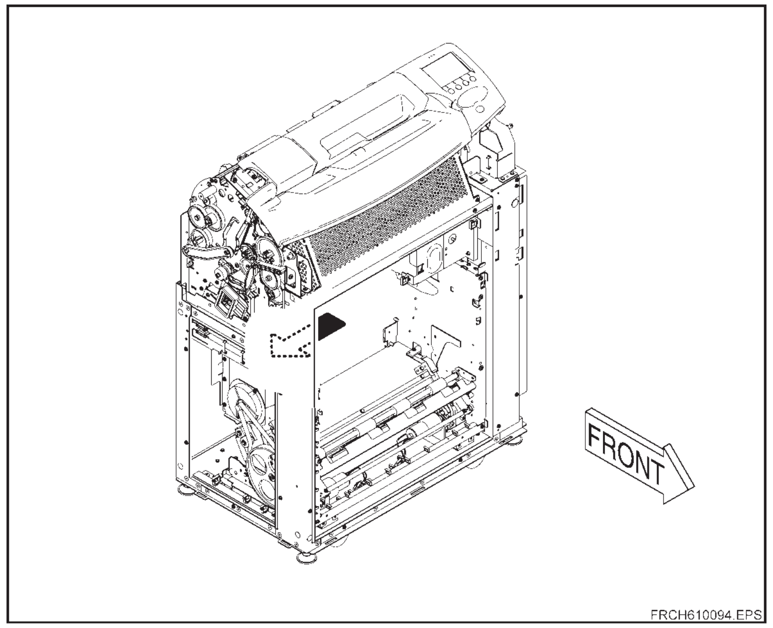
Exercise care not to drop the bracket. If the bracket drops, it may damage nearby parts.

◇ REFERENCE ◇

The removed bracket is a part for providing protection against vibration during transit. Therefore, it need not be installed after completion of the procedure.


Bracket
#1
[Remove]
Screw (DT3x6)
#2
[Remove]
Long-nose pliers
FRCH610093.EPS

8. **Take the procedure 9 from the direction indicated by the arrow in the figure.**


FRONT
FRCH610094.EPS

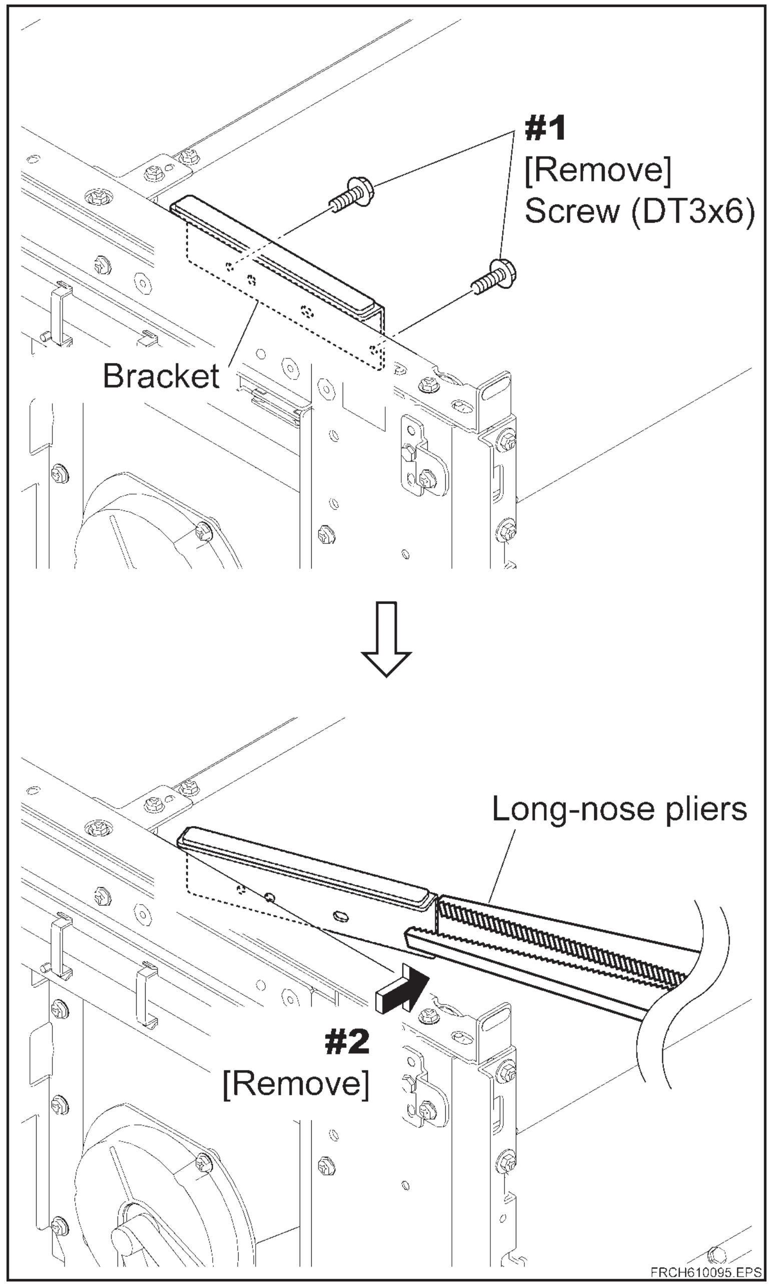
9. **Remove the screws. With long-nose pliers, remove the bracket.**

◆ NOTE ◆

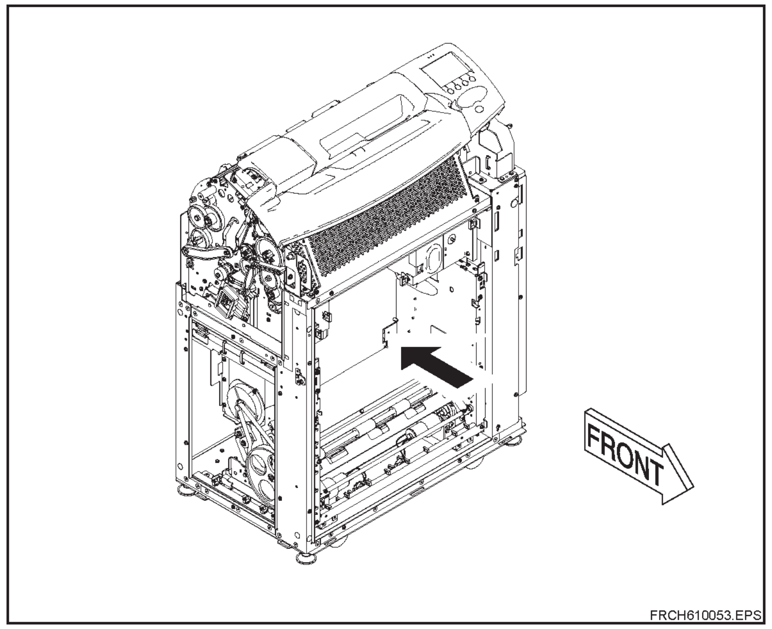
Exercise care not to drop the bracket. If the bracket drops, it may damage nearby parts.

◇ REFERENCE ◇

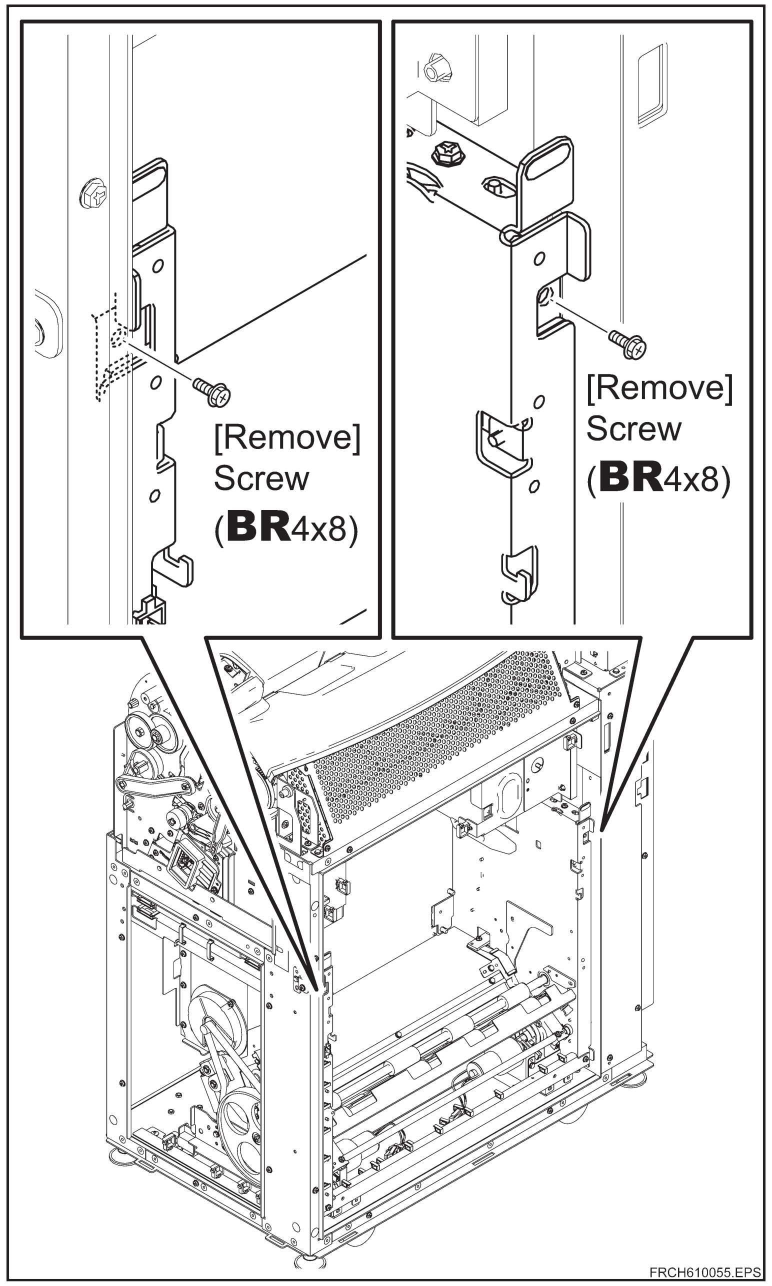
The removed bracket is a part for providing protection against vibration during transit. Therefore, it need not be installed after completion of the procedure.


#1
[Remove]
Screw (DT3x6)
Bracket
Long-nose pliers
#2
[Remove]
FRCH610095.EPS

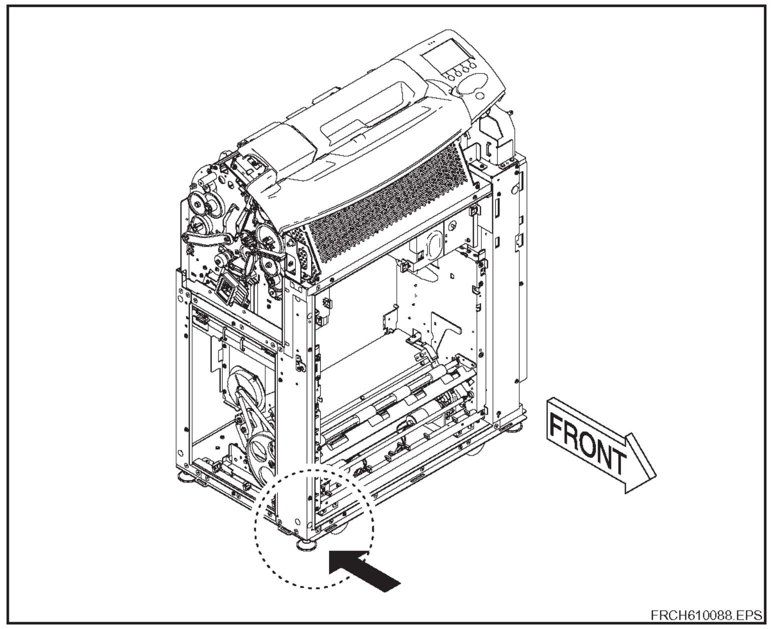
10. **Take the procedure 11 from the direction indicated by the arrow in the figure.**


FRONT
FRCH610053.EPS

11. **Remove the retaining screws of the subscanning unit.**


[Remove]
Screw
(BR4x8)
[Remove]
Screw
(BR4x8)
FRCH610055.EPS

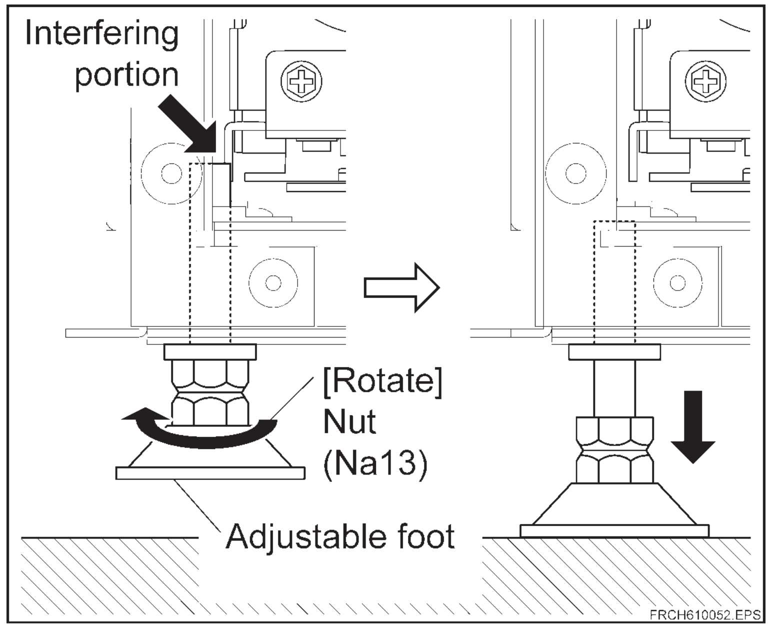
12. **Take the procedure 13 from the direction indicated by the arrow in the figure.**


FRONT
FRCH610088.EPS

13. **Rotate the nut, and lower the adjustable foot.**

◆ NOTE ◆

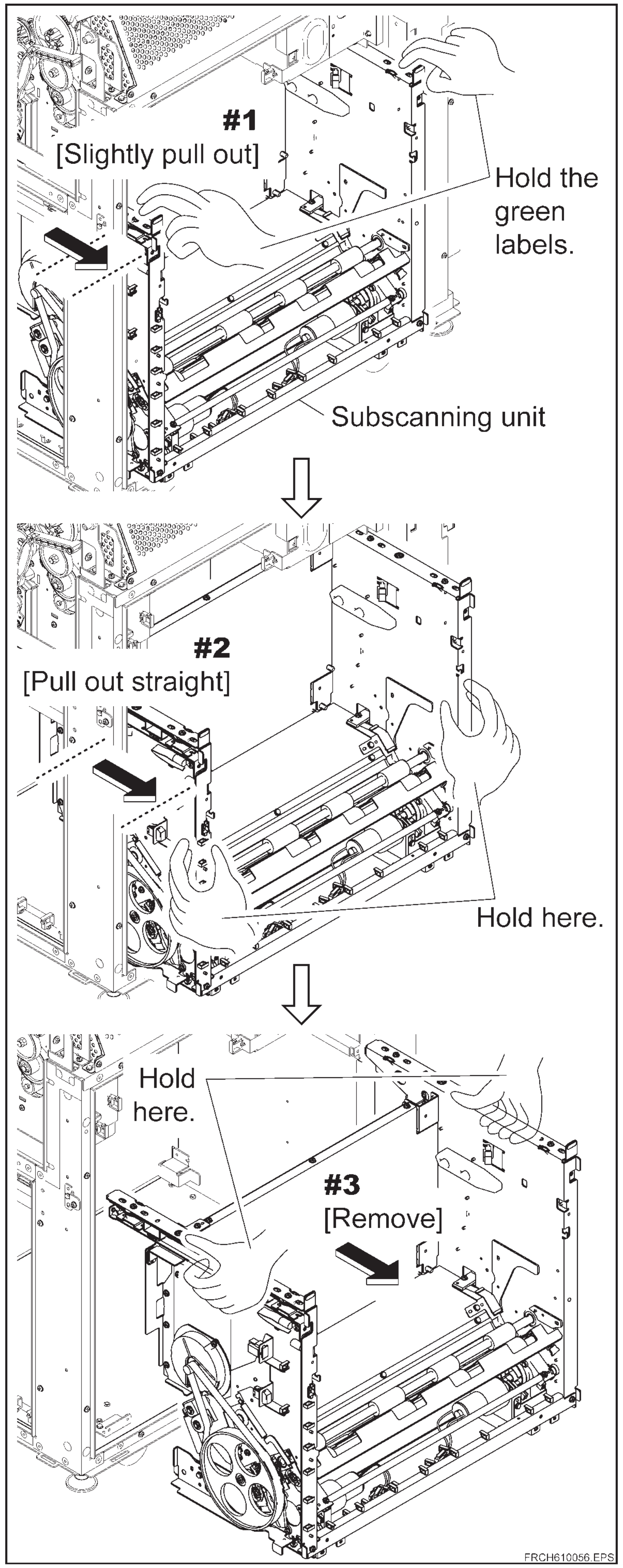
Be sure to rotate the nut before lowering the adjustable foot. Otherwise, the shaft of the adjustable foot might interfere with the subscanning unit, preventing the subscanning unit from being removed.


Interfering portion
[Rotate]
Nut
(Na13)
Adjustable foot
FRCH610052.EPS

14. **Holding the green labels, pull out the subscanning unit slightly forward. Shift the held positions, pull out the subscanning unit straight, and remove the subscanning unit while holding its upper part.**

◆ **NOTE** ◆

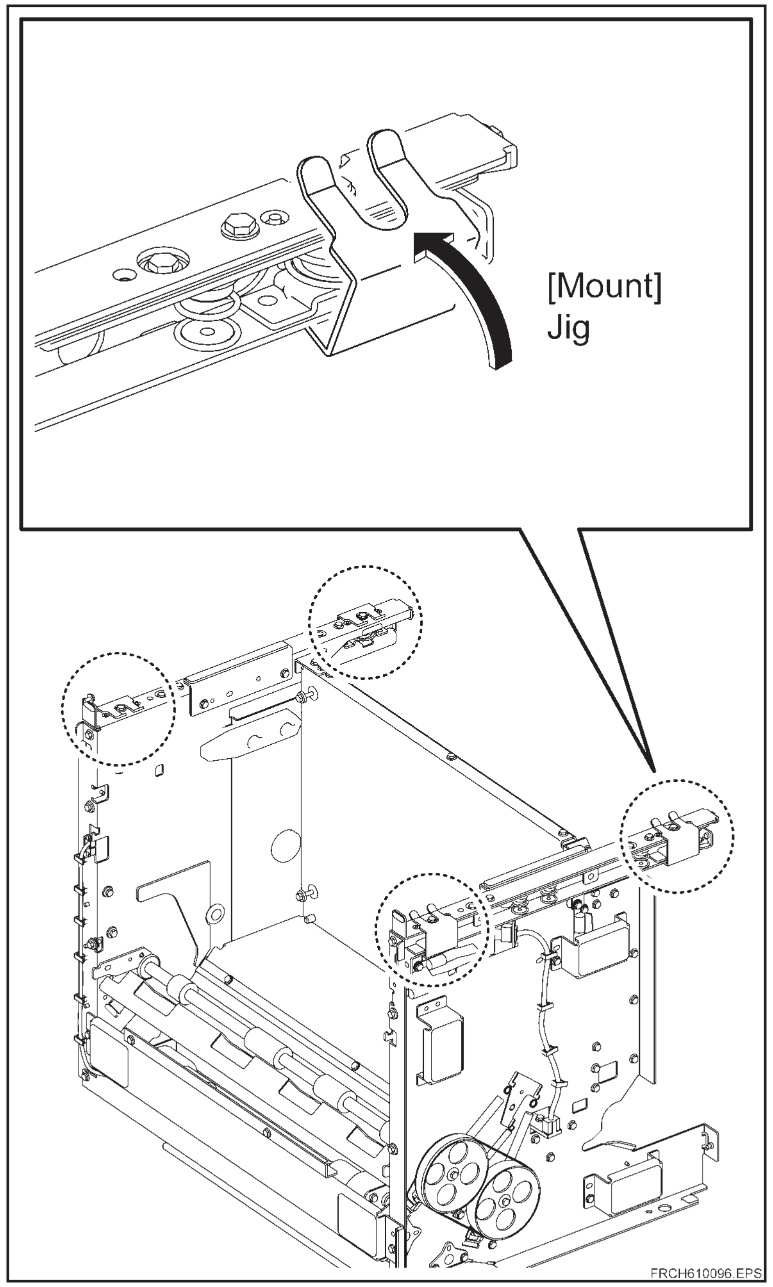
Be sure to hold the specified positions to pull out straight the subscanning unit. Otherwise, part of the subscanning unit might come into contact with the housing, causing damage.


#1
[Slightly pull out]
Hold the green labels.
Subscanning unit
#2
[Pull out straight]
Hold here.
Hold here.
#3
[Remove]
FRCH610056.EPS

15. **Have on hand the jig that was removed in step 4. Mount it on the vibration-proof rubber assembly.**

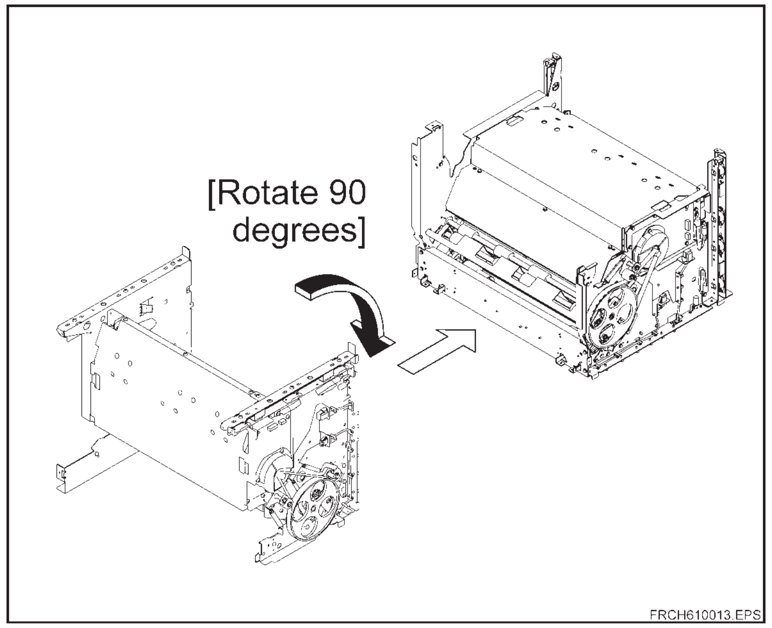
◆ **NOTE** ◆

After subscanning unit removal, be sure to mount the jig. If you perform the procedure without mounting the jig, the vibration-proof rubber assembly may fail to properly function.

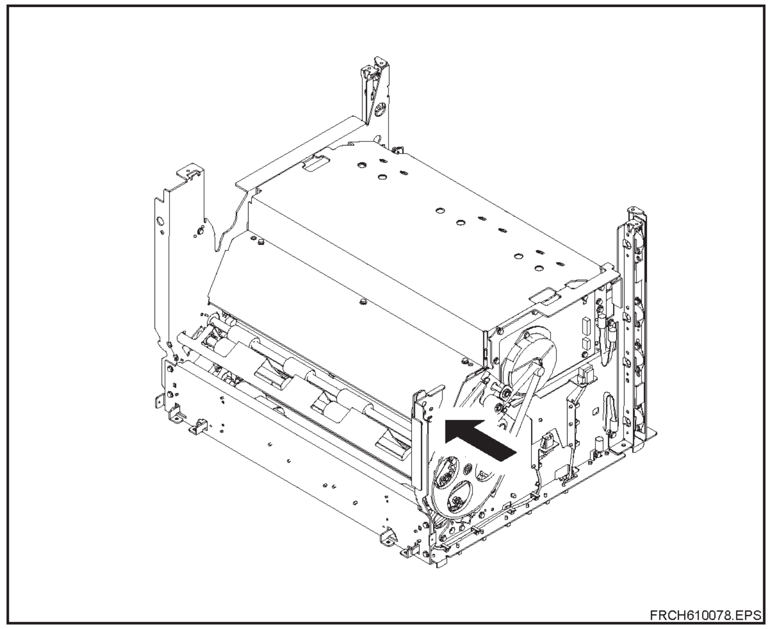

[Mount]
Jig
FRCH610096.EPS

10.5 Cleaning the Guides, Center Rollers, and Rubber Rollers

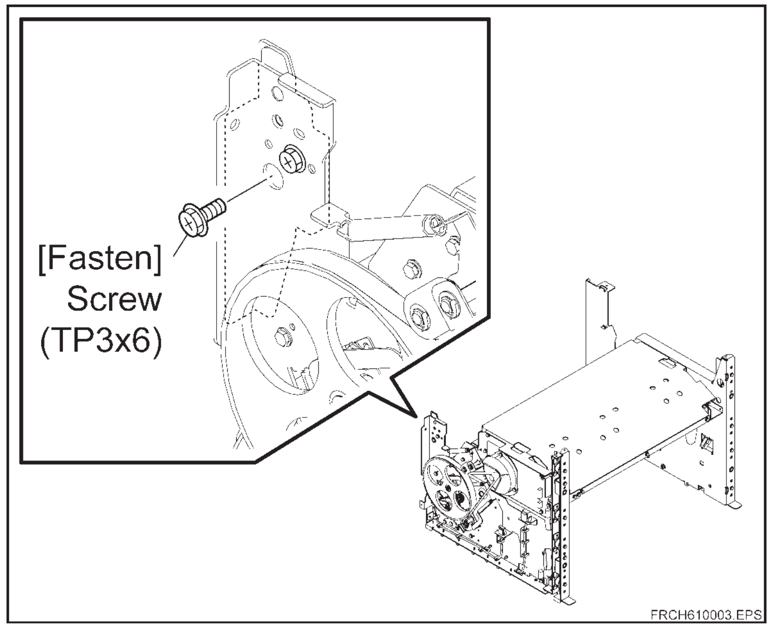
1. **Place the subscanning unit in the orientation indicated in the figure.**


[Rotate 90 degrees]
FRCH610013.EPS

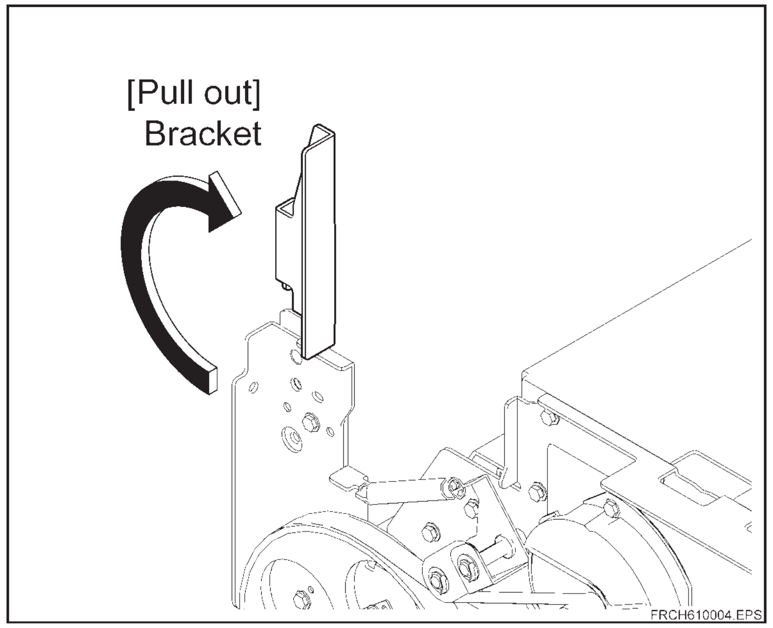
2. **Take the procedures from 3 to 5 from the direction indicated by the arrow in the figure.**


FRCH610078.EPS

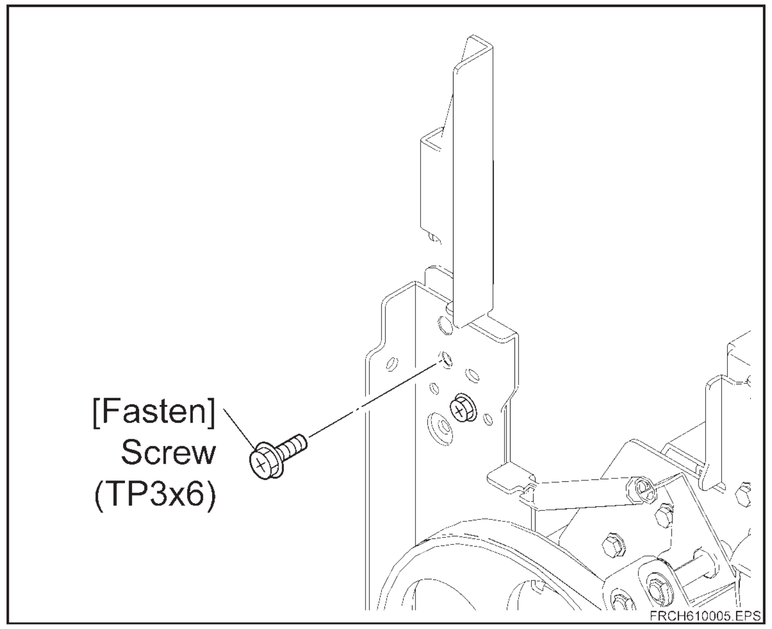
3. **Remove the screw.**


[Fasten]
Screw
(TP3x6)
FRCH610003.EPS

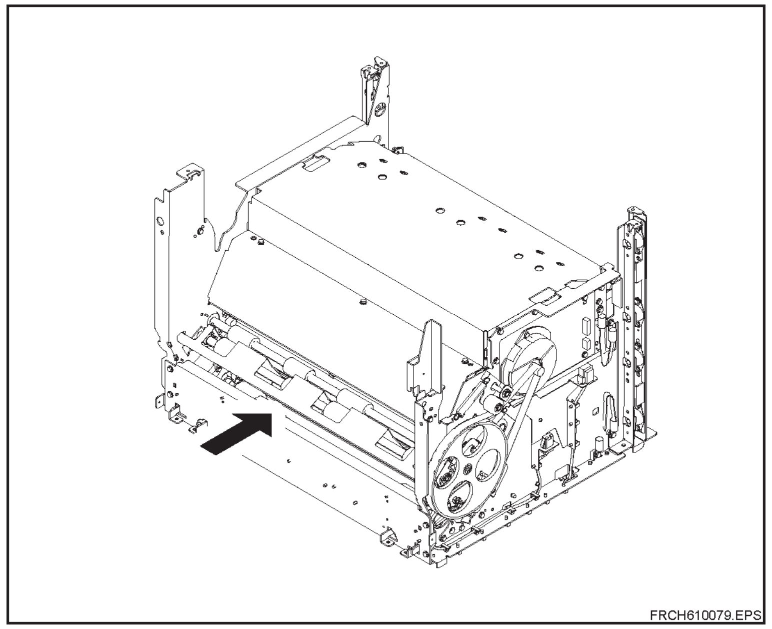
4. **Rotate the bracket and pull it out of the subscanning unit.**


[Pull out]
Bracket
FRCH610004.EPS

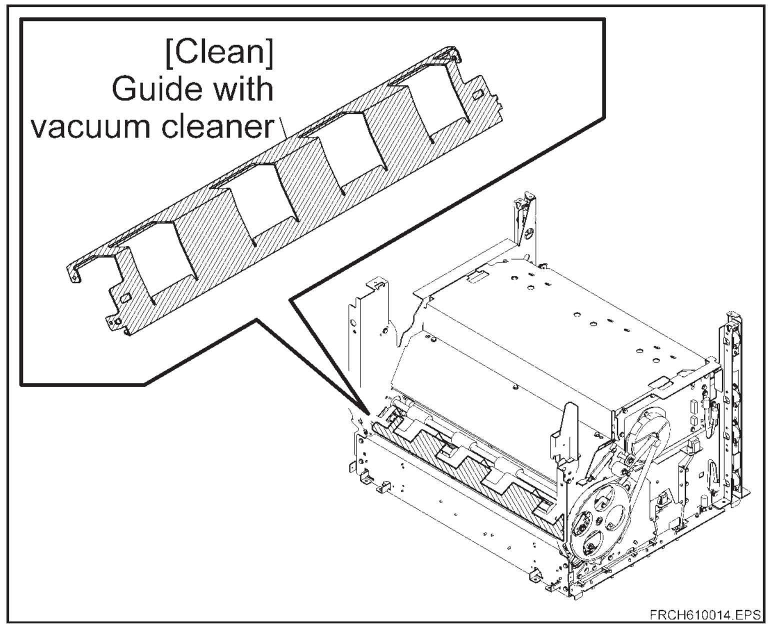
5. **Reinstall the screw.**


[Fasten]
Screw
(TP3x6)
FRCH610005.EPS

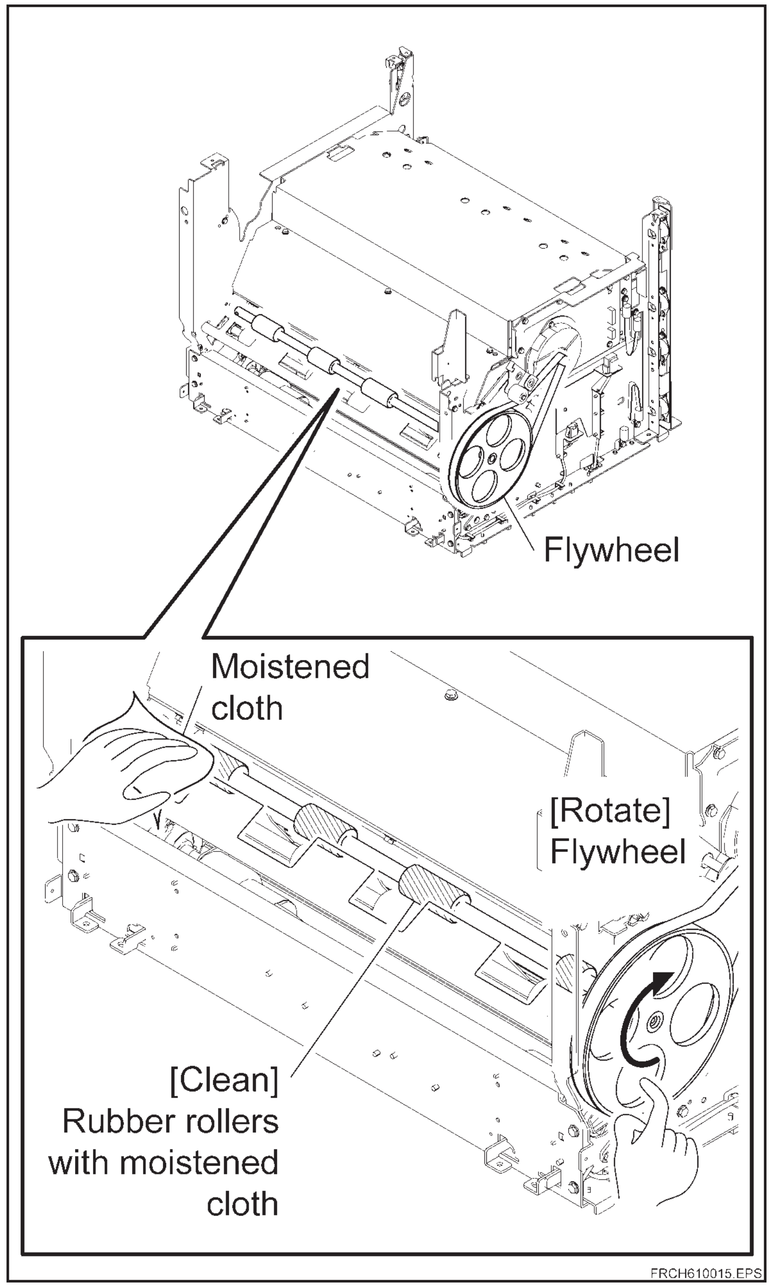
6. **Take the procedures from 7 to 9 from the direction indicated by the arrow in the figure.**


FRCH610079.EPS

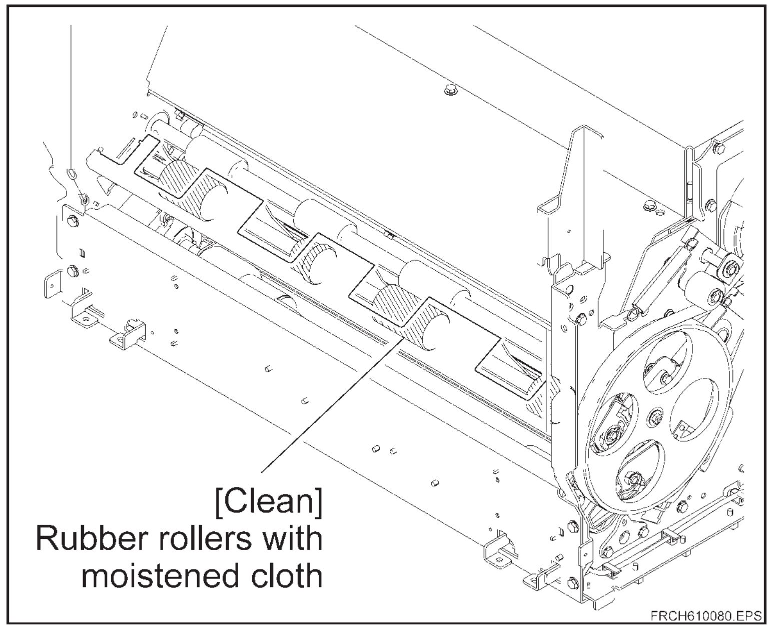
7. **Clean the guide with a vacuum cleaner.**


[Clean]
Guide with
vacuum cleaner
FRCH610014.EPS

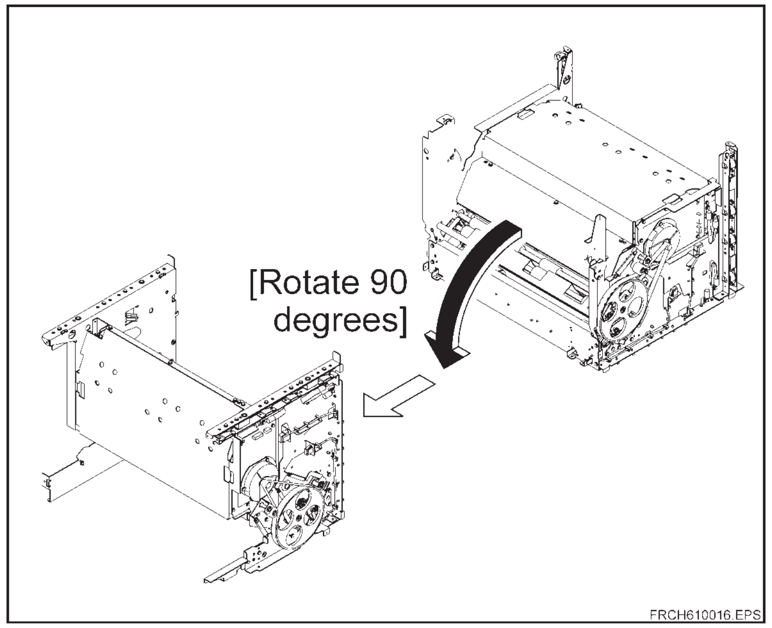
8. **Push the moistened cloth against the rubber rollers. Clean the rubber rollers while rotating them via the flywheel.**


Flywheel
Moistened
cloth
[Rotate]
Flywheel
[Clean]
Rubber rollers
with moistened
cloth
FRCH610015.EPS

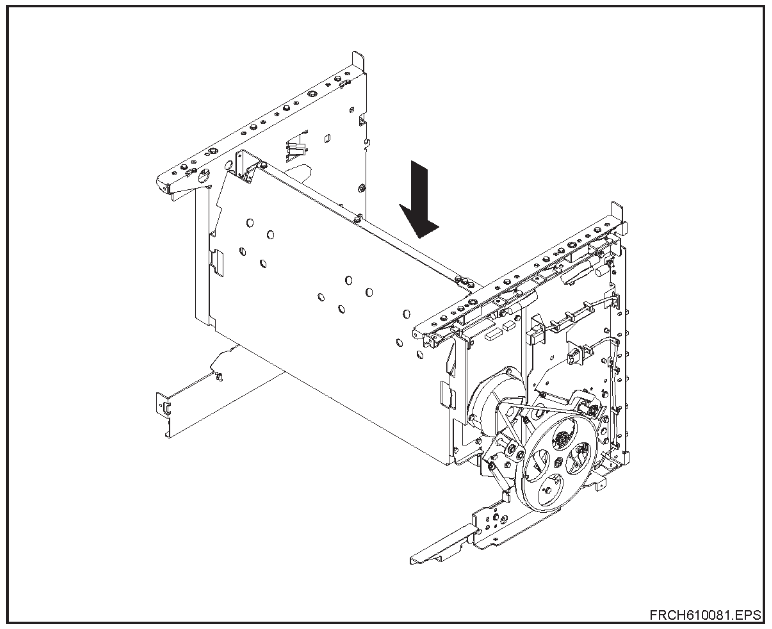
9. **Clean the rubber rollers with a moistened cloth.**


[Clean]
Rubber rollers with
moistened cloth
FRCH610080.EPS

10. **Place the subscanning unit in the orientation indicated in the figure.**


[Rotate 90 degrees]
FRCH610016.EPS

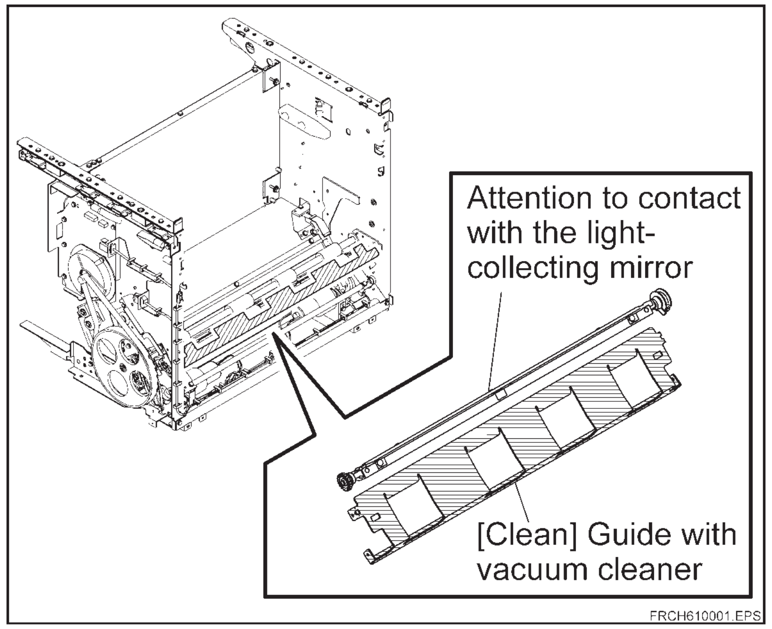
11. **Take the procedures from 12 to 14 from the direction indicated by the arrow in the figure.**


FRCH610081.EPS

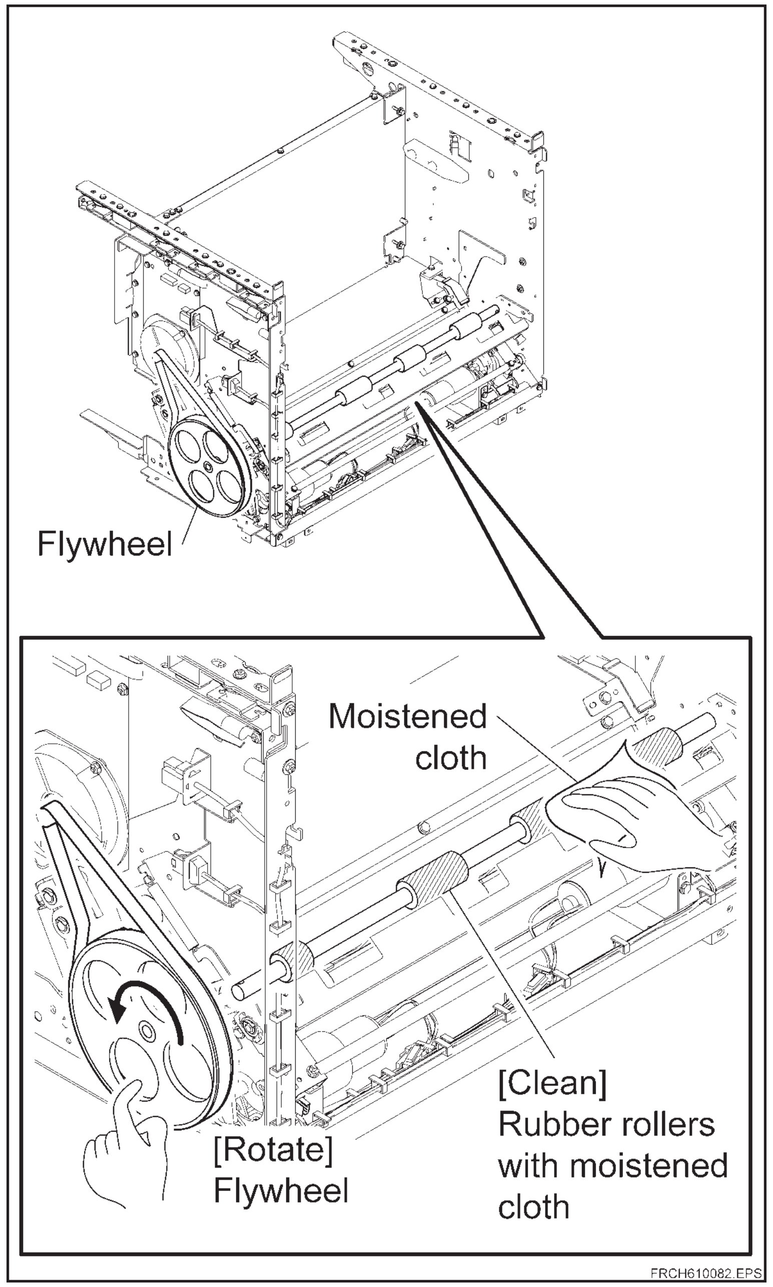
12. **Clean the guide with a vacuum cleaner.**

◆ NOTE ◆

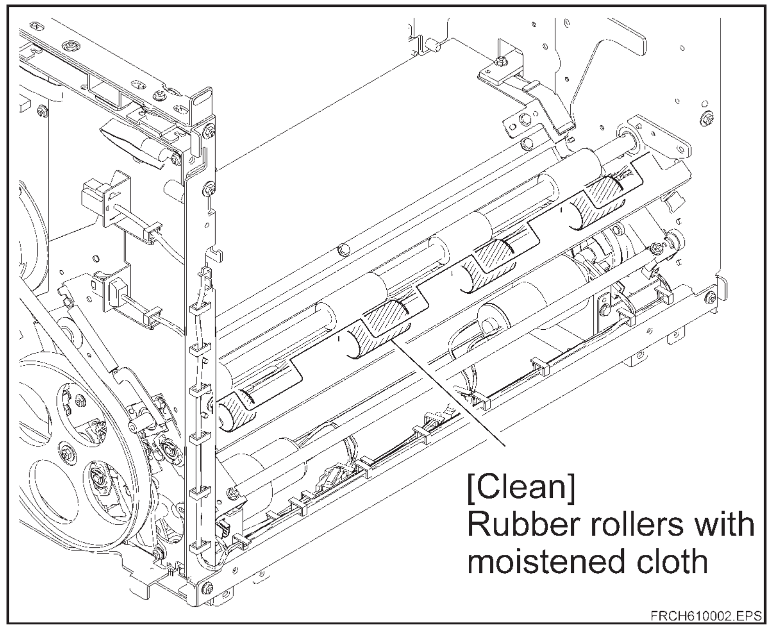
Exercise care not to damage the light-receiving face of the light-collecting mirror when cleaning the guide with the vacuum cleaner.


Attention to contact with the light-collecting mirror
[Clean] Guide with vacuum cleaner
FRCH610001.EPS

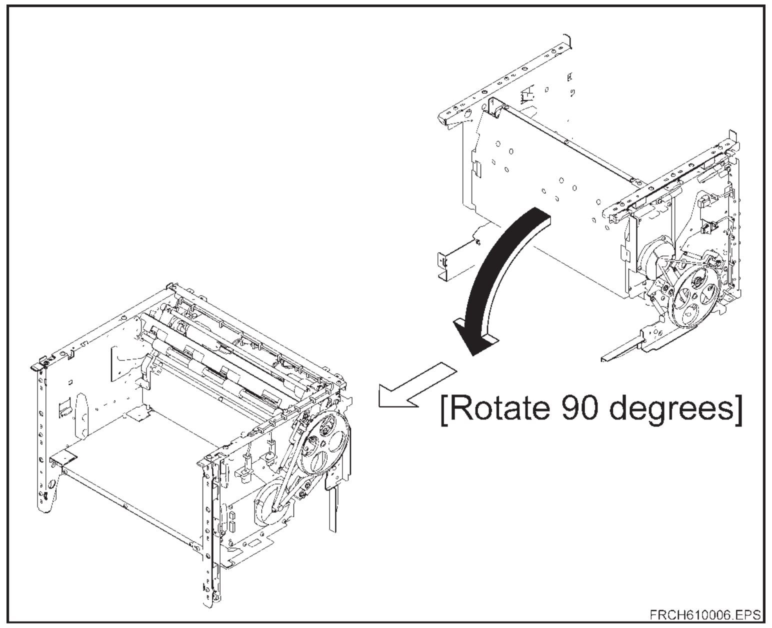
13. **Push the moistened cloth against the rubber rollers. Clean the rubber rollers while rotating them via the flywheel.**


Flywheel
Moistened cloth
[Rotate] Flywheel
[Clean] Rubber rollers with moistened cloth
FRCH610082.EPS

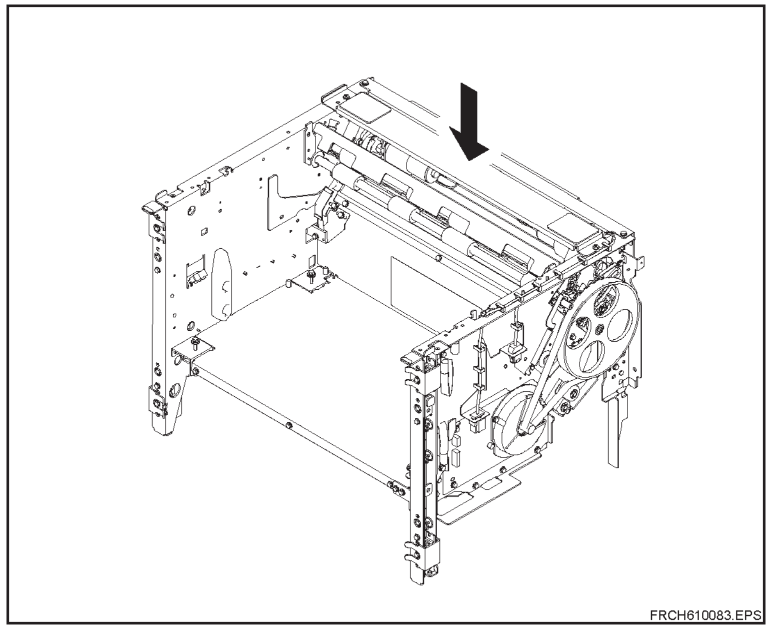
14. **Clean the rubber rollers with a moistened cloth.**


[Clean] Rubber rollers with moistened cloth
FRCH610002.EPS

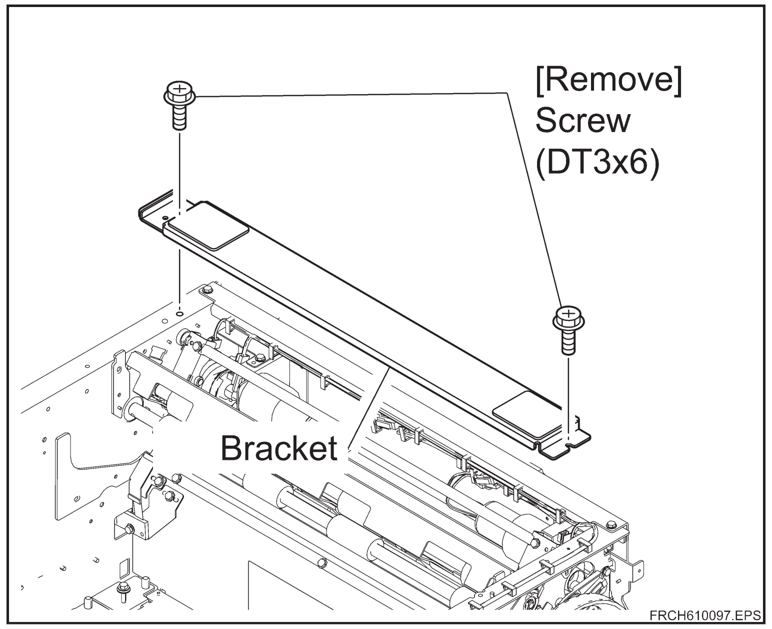
15. **Place the subscanning unit in the orientation indicated in the figure.**


[Rotate 90 degrees]
FRCH610006.EPS

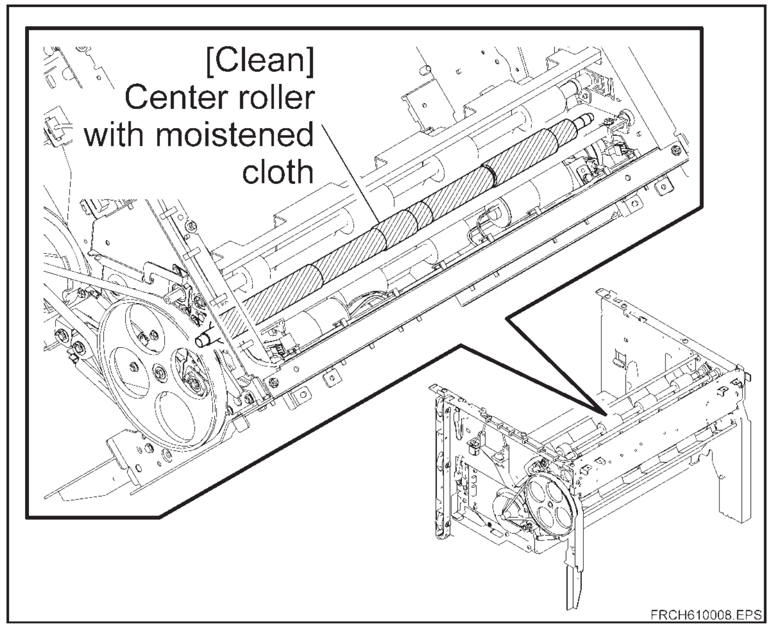
16. **Take the procedures from 17 to 19 from the direction indicated by the arrow in the figure.**


FRCH610083.EPS

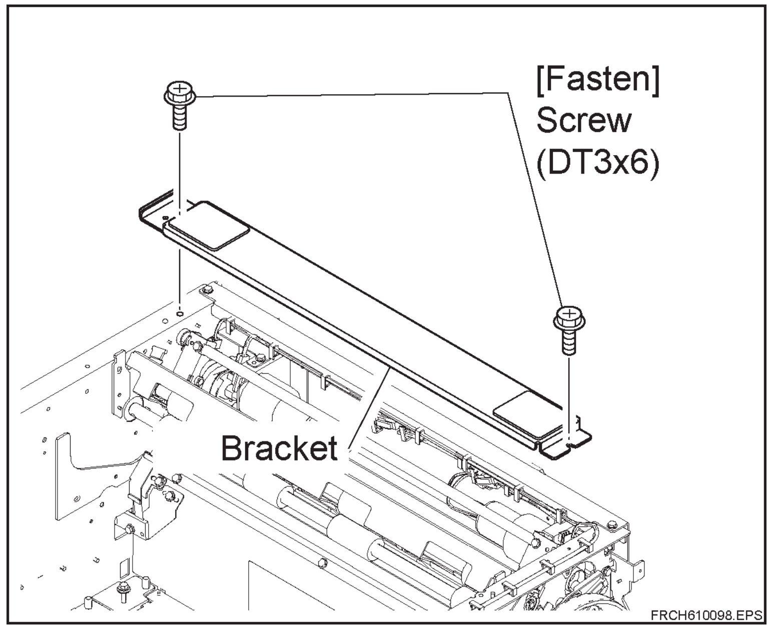
17. **Remove the bracket.**


[Remove]
Screw
(DT3x6)
Bracket
FRCH610097.EPS

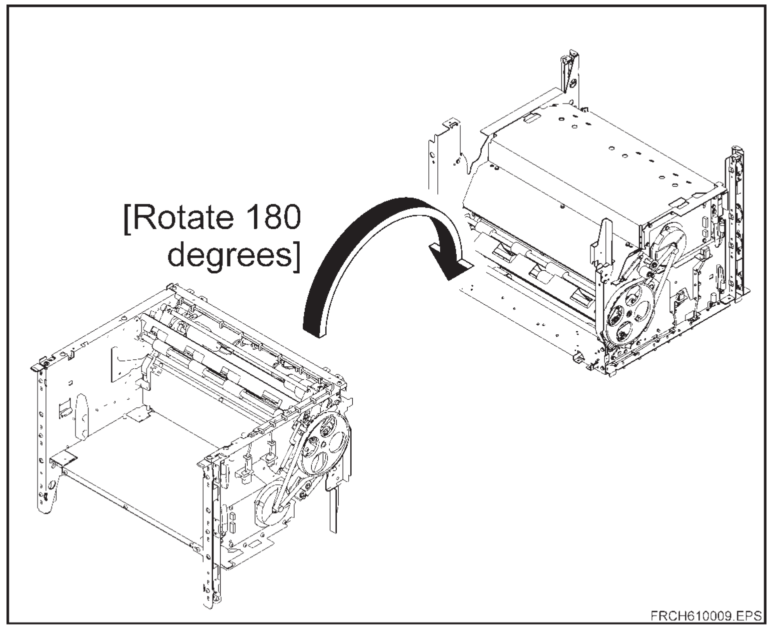
18. **Clean the center roller with a moistened cloth.**


[Clean]
Center roller
with moistened
cloth
FRCH610008.EPS

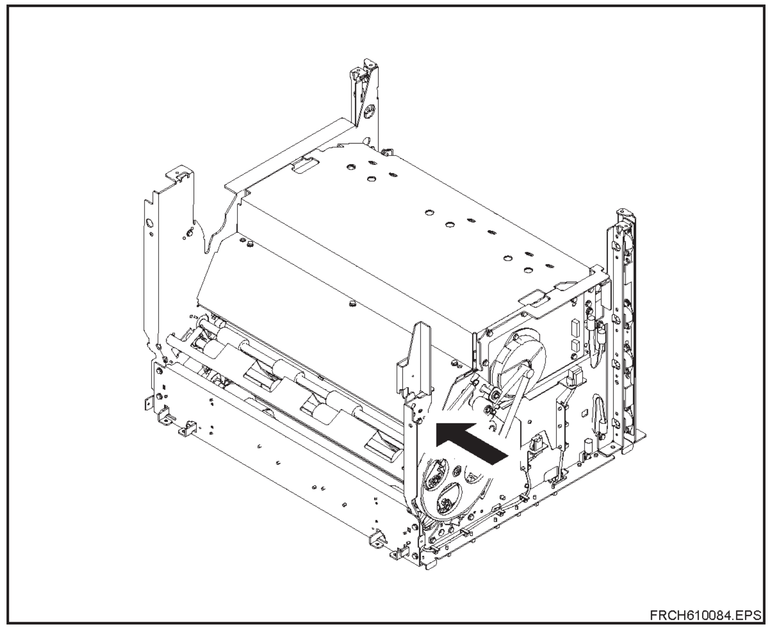
19. **Install the bracket.**


[Fasten]
Screw
(DT3x6)
Bracket
FRCH610098.EPS

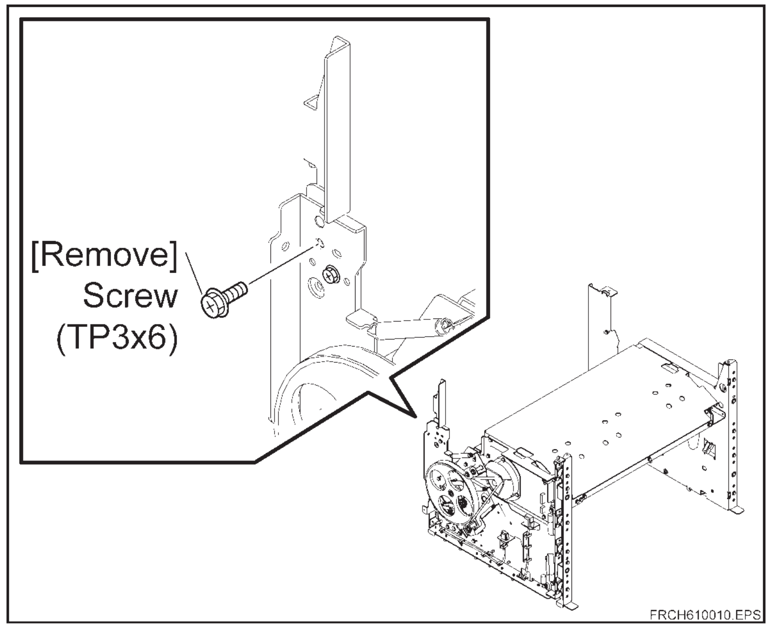
20. **Place the subscanning unit in the orientation indicated in the figure.**


[Rotate 180
degrees]
FRCH610009.EPS

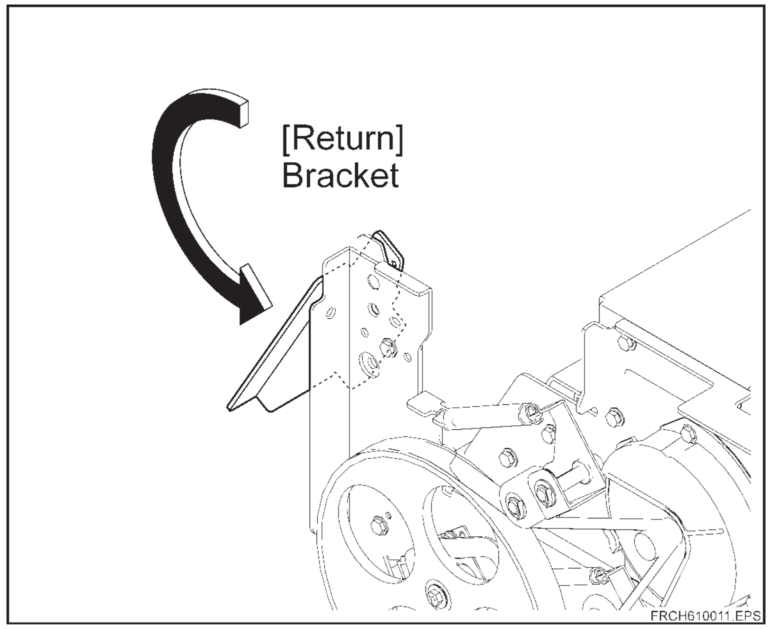
21. **Take the procedures from 22 to 24 from the direction indicated by the arrow in the figure.**


FRCH610084.EPS

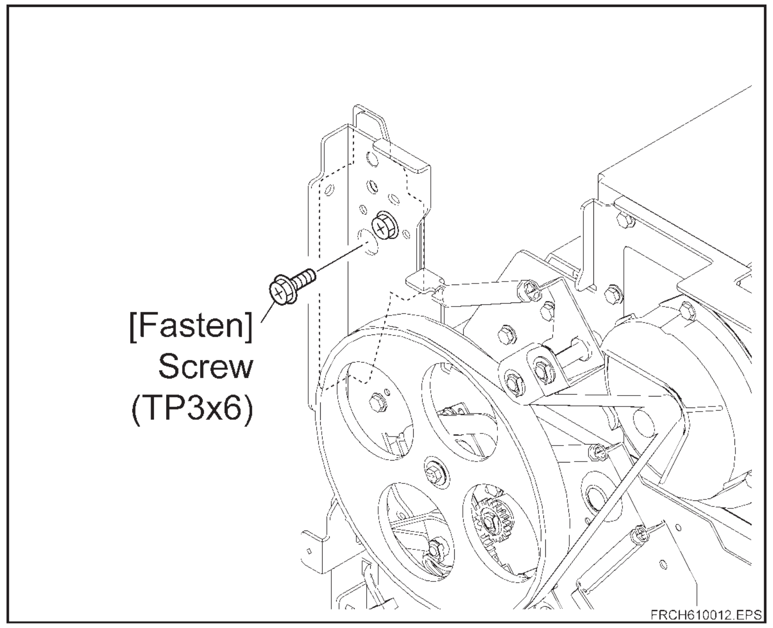
22. **Remove the screw.**


[Remove]
Screw
(TP3x6)
FRCH610010.EPS

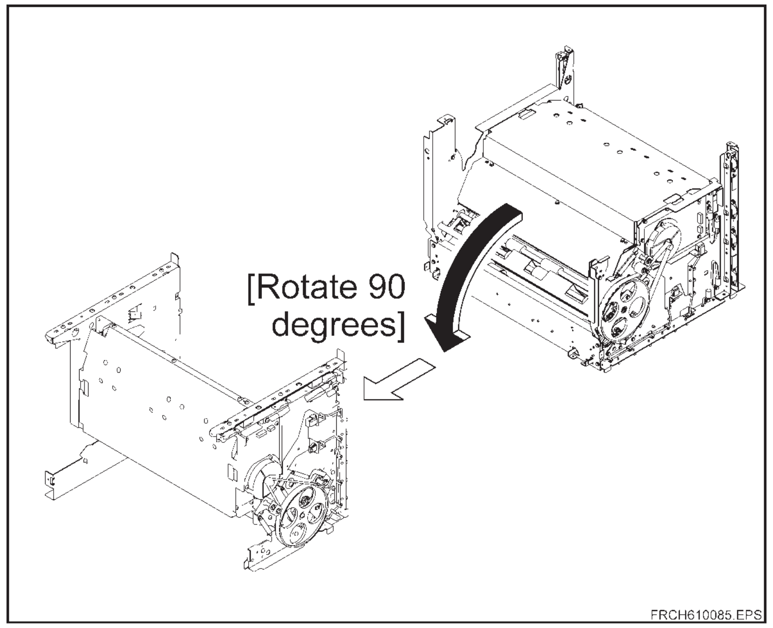
23. **Rotate the bracket, and return it into the subscanning unit.**


[Return]
Bracket
FRCH610011.EPS

24. **Reinstall the screw.**

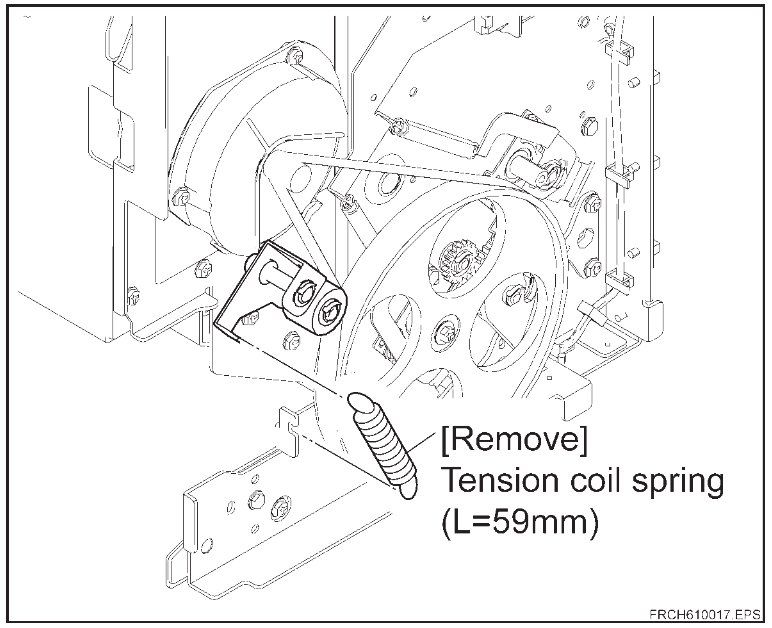

[Fasten]
Screw
(TP3x6)
FRCH610012.EPS

25. **Place the subscanning unit in the orientation indicated in the figure.**


[Rotate 90
degrees]
FRCH610085.EPS

10.6 Cleaning the Flywheel (Large) and Kapton® Belt

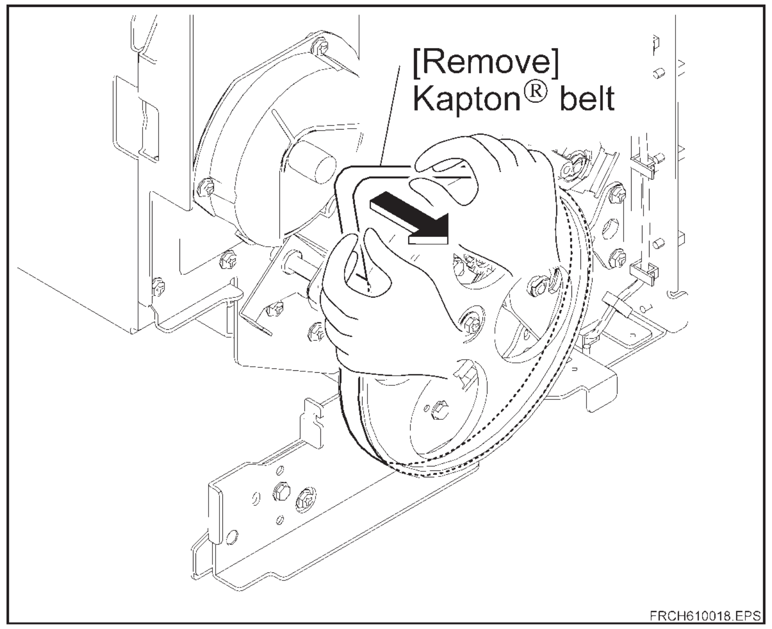
1. **Remove the tension coil spring.**


[Remove]
Tension coil spring
(L=59mm)
FRCH610017.EPS

2. **Support the Kapton® belt on the positions indicated in the figure, and remove it.**

◆ NOTE ◆

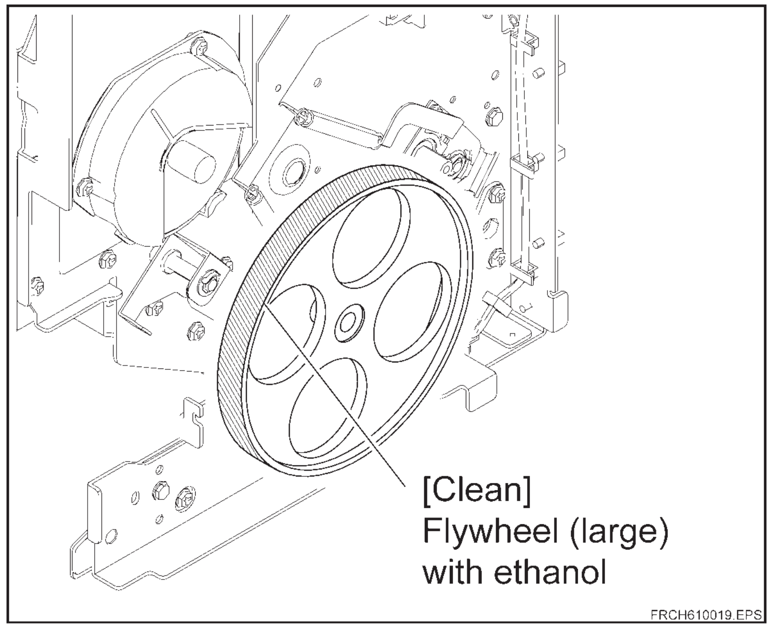
When removing the Kapton® belt, exercise care not to turn the belt inside out. The machine might not work normally.


[Remove]
Kapton® belt
FRCH610018.EPS

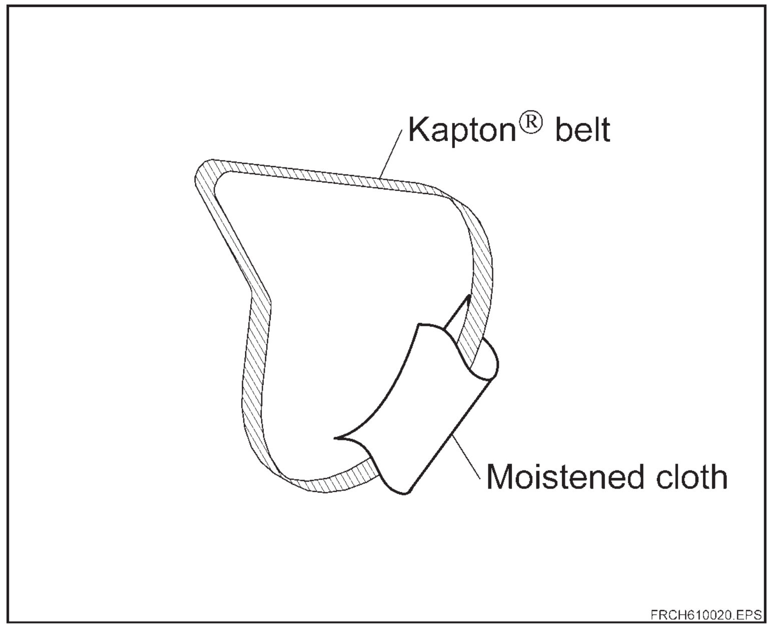
3. **Clean the flywheel (large) with a cloth dampened with ethanol.**

◆ INSTRUCTION ◆

Do not damage the contact face of the Kapton® belt.


[Clean]
Flywheel (large)
with ethanol
FRCH610019.EPS

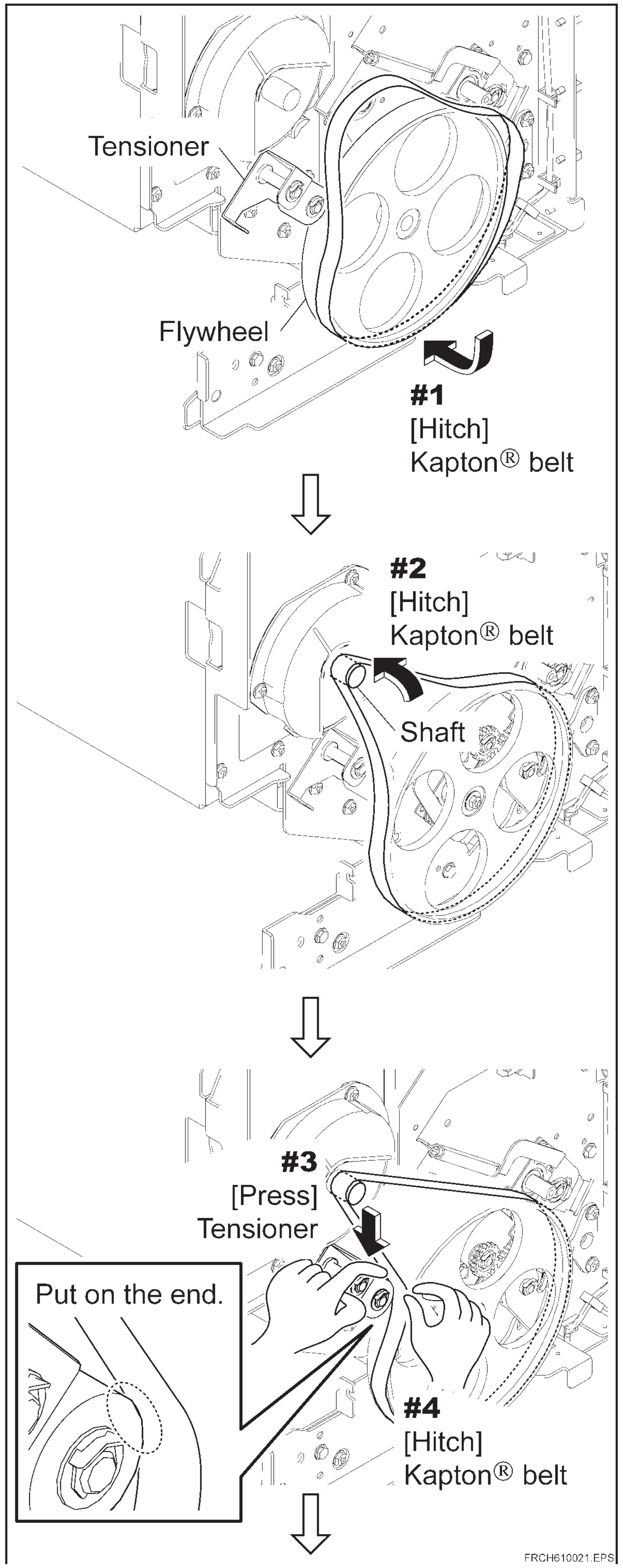
4. **Clean the Kapton® belt with a moistened cloth.**

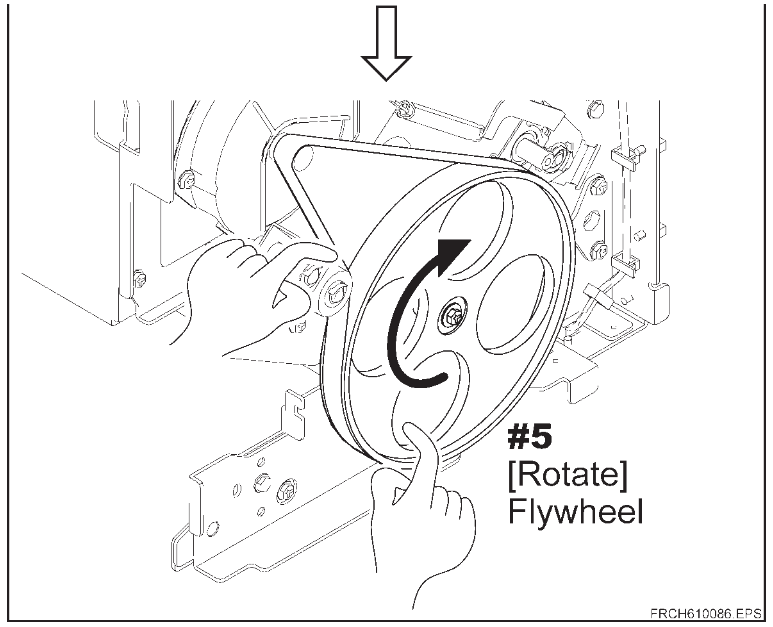

Kapton® belt
Moistened cloth
FRCH610020.EPS

5. **Hitch the lower part of the Kapton® belt on the flywheel, and hitch the upper part on the shaft. While pressing the tensioner from upward, put the end of the Kapton® belt on the tensioner. While rotating the flywheel, mount the Kapton® belt.**

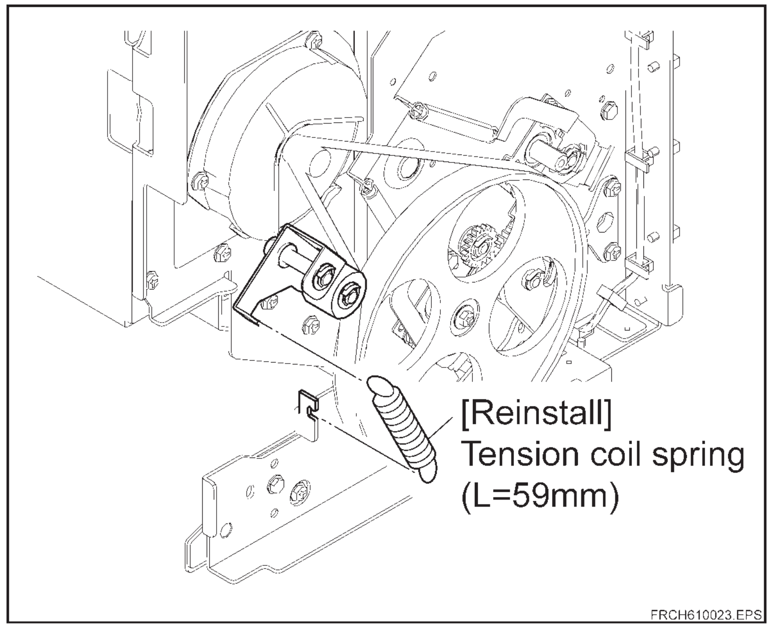
◆ NOTE ◆

When reinstalling the Kapton ® belt, exercise care not to turn the belt inside out. The machine might not work normally.

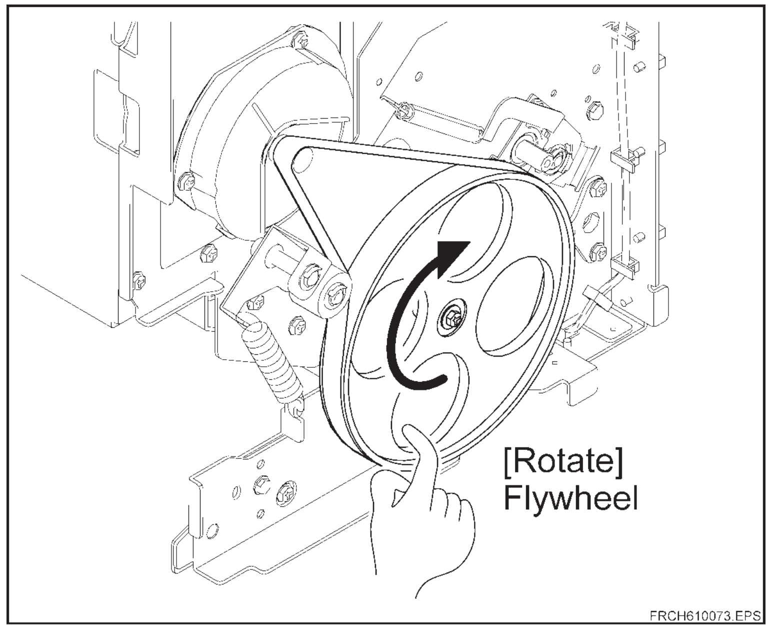

Tensioner
Flywheel
#1
[Hitch]
Kapton® belt
#2
[Hitch]
Kapton® belt
Shaft
#3
[Press]
Tensioner
Put on the end.
#4
[Hitch]
Kapton® belt
FRCH610021.EPS


#5
[Rotate]
Flywheel
FRCH610086.EPS

6. **Reinstall the tension coil spring.**

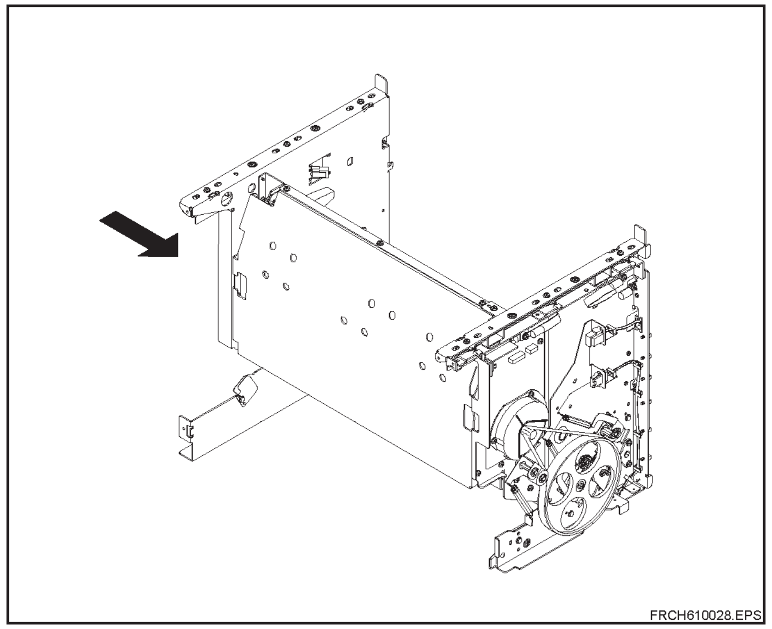

[Reinstall]
Tension coil spring
(L=59mm)
FRCH610023.EPS

7. **Rotate the flywheel, and check to make sure that the Kapton® belt does not come off.**


[Rotate]
Flywheel
FRCH610073.EPS

10.7 Cleaning the Flywheel (Small) and Rubber Belt

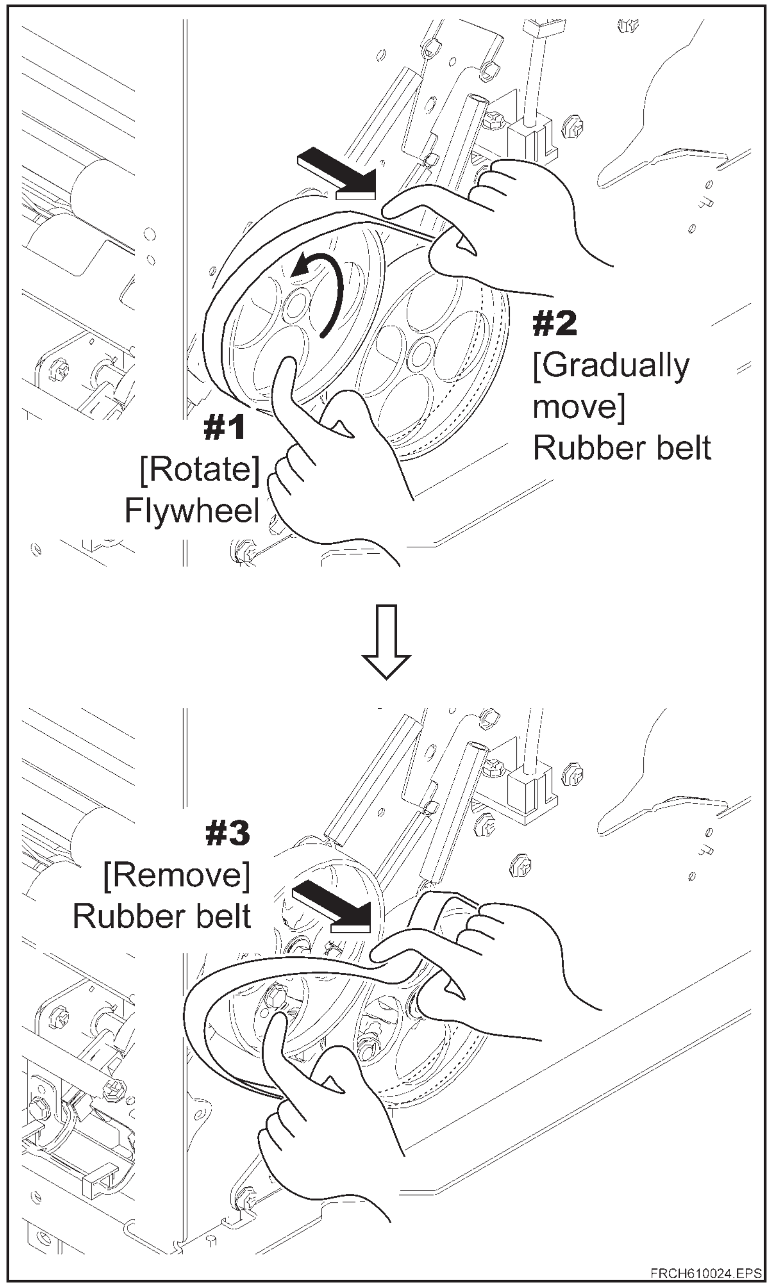
1. **Take the procedures from 2 to 6 from the direction indicated by the arrow in the figure.**


FRCH610028.EPS

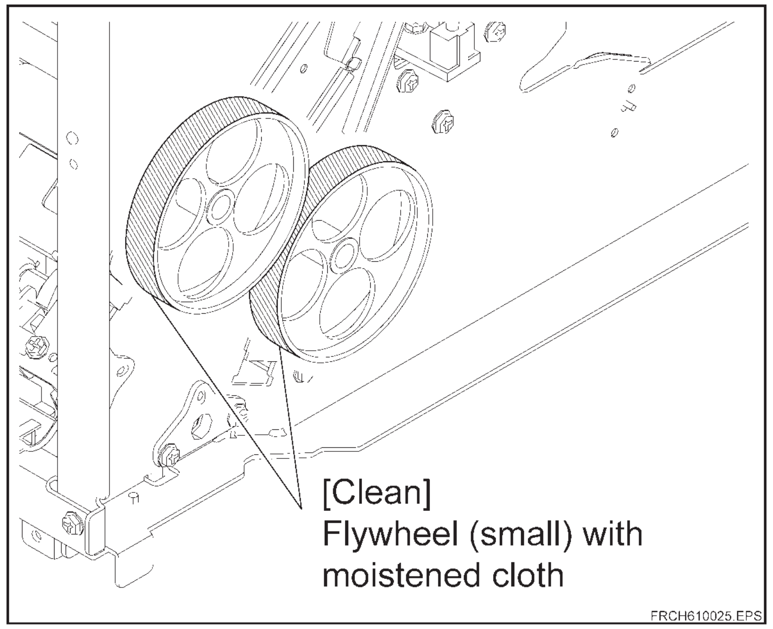
2. **While rotating the flywheel, gradually move the rubber belt toward you and remove it.**

CAUTION

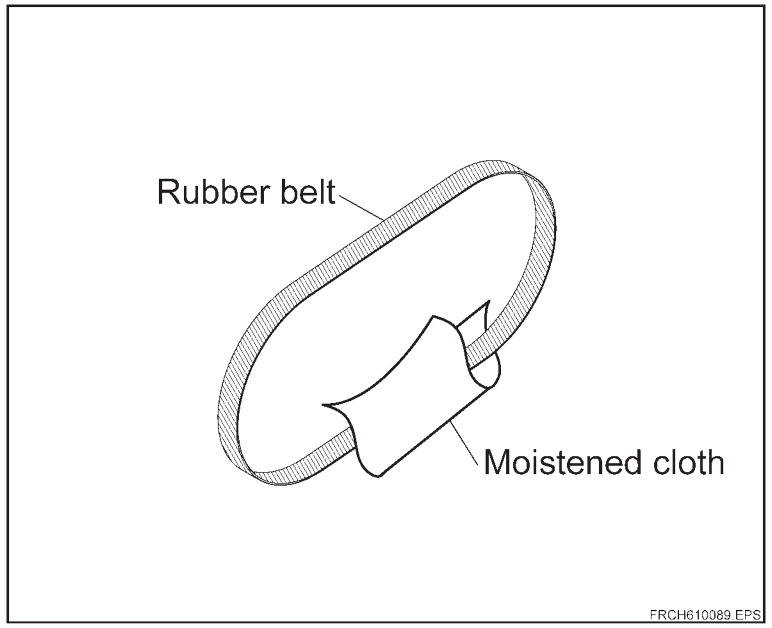
Do not pull only the rubber belt to remove it without rotating the flywheel. If the rubber belt goes slack, the machine may not work normally.


#1
[Rotate]
Flywheel
#2
[Gradually
move]
Rubber belt
#3
[Remove]
Rubber belt
FRCH610024.EPS

3. **Clean the flywheel (small) with a moistened cloth.**


[Clean]
Flywheel (small) with
moistened cloth
FRCH610025.EPS

4. **Clean the rubber belt with a moistened cloth.**


Rubber belt
Moistened cloth
FRCH610089.EPS

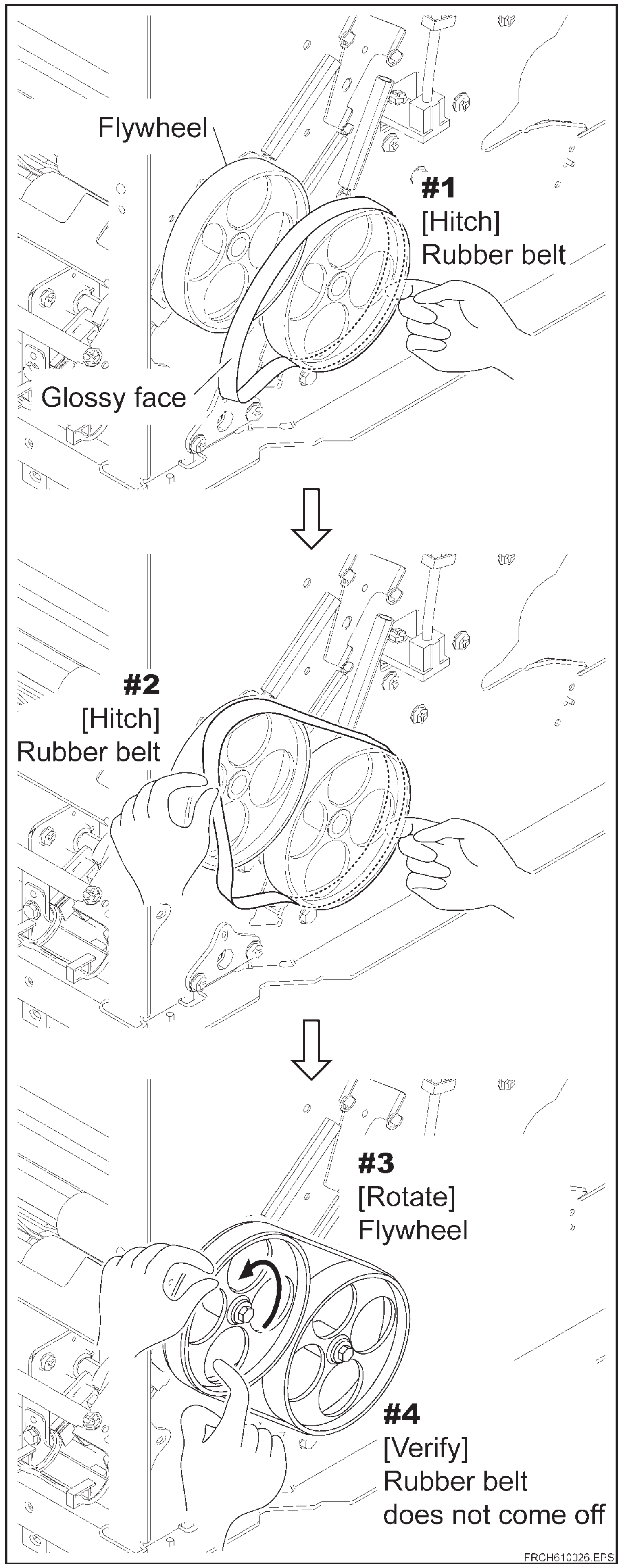
5. **Hitch the rubber belt on the lower flywheel, and then hitch on the upper flywheel. Put on the rubber belt while rotating the flywheel, and check to make sure that the rubber belt does not come off.**

⚠ **CAUTION**

Do not pull only the rubber belt to reinstall it without rotating the flywheel. If the rubber belt goes slack, the machine may not work normally.

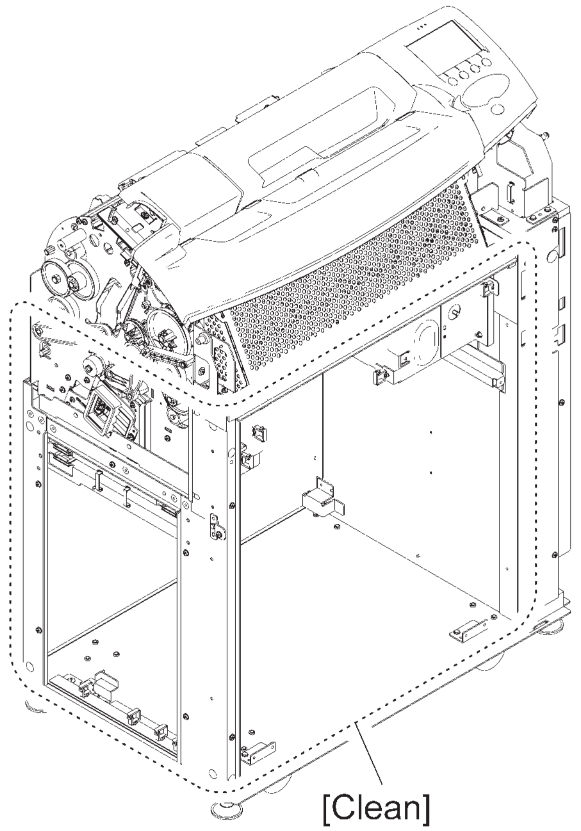
◆ ***NOTE*** ◆

Reinstall the rubber belt with its glossy face facing outward. If the rubber belt is placed inside out, the machine might not work normally.


Flywheel
#1
[Hitch]
Rubber belt
Glossy face
#2
[Hitch]
Rubber belt
#3
[Rotate]
Flywheel
#4
[Verify]
Rubber belt
does not come off
FRCH610026.EPS

10.8 Cleaning Inside the Machine

1. Clean the inside of the machine and the antistatic member with a vacuum cleaner to remove dust entering from the outside of the machine.

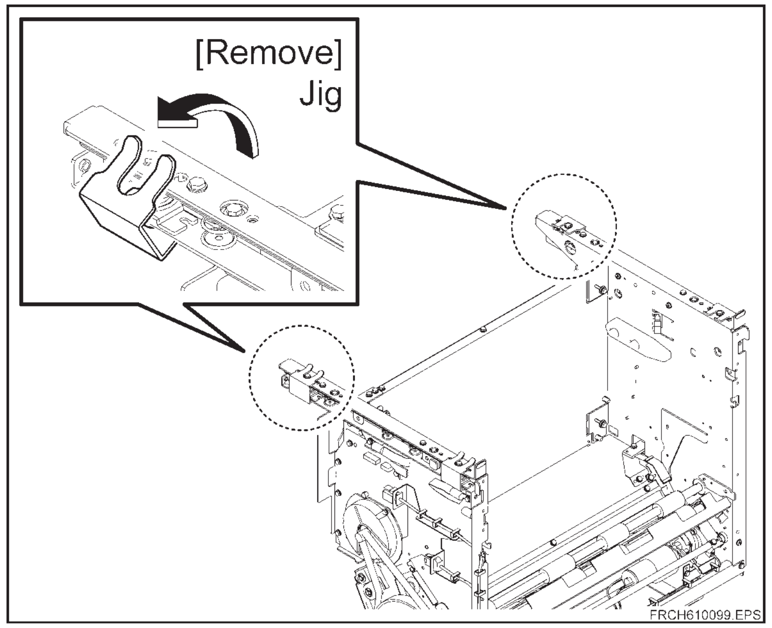

[Clean]
Inside of the machine
with vacuum cleaner
FRCH610087.EPS

10.9 Reinstalling the Subscanning Unit

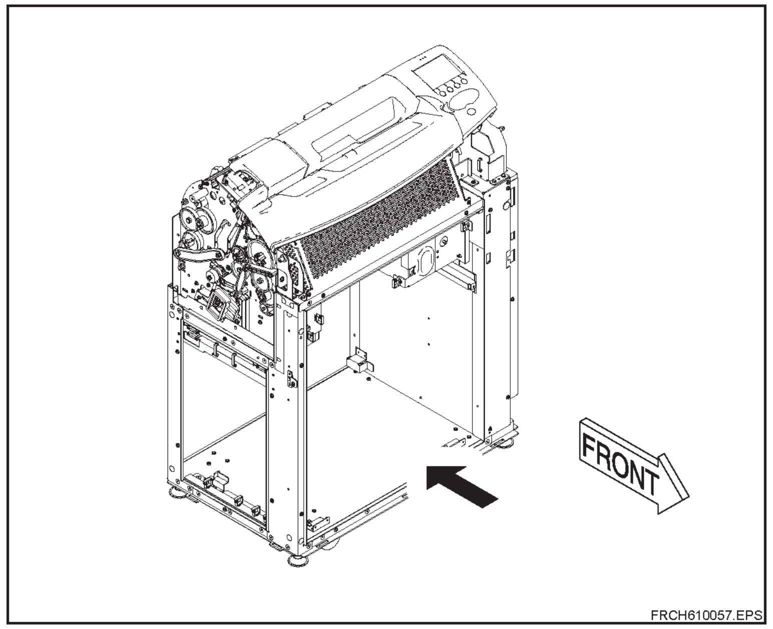
1. **Remove the two jigs as indicated in the figure.**

◆ ***NOTE*** ◆

Remove only the two jigs shown. If you remove all the jigs, you may not be able to mount the subscanning unit in the housing.


[Remove]
Jig
FRCH610099.EPS

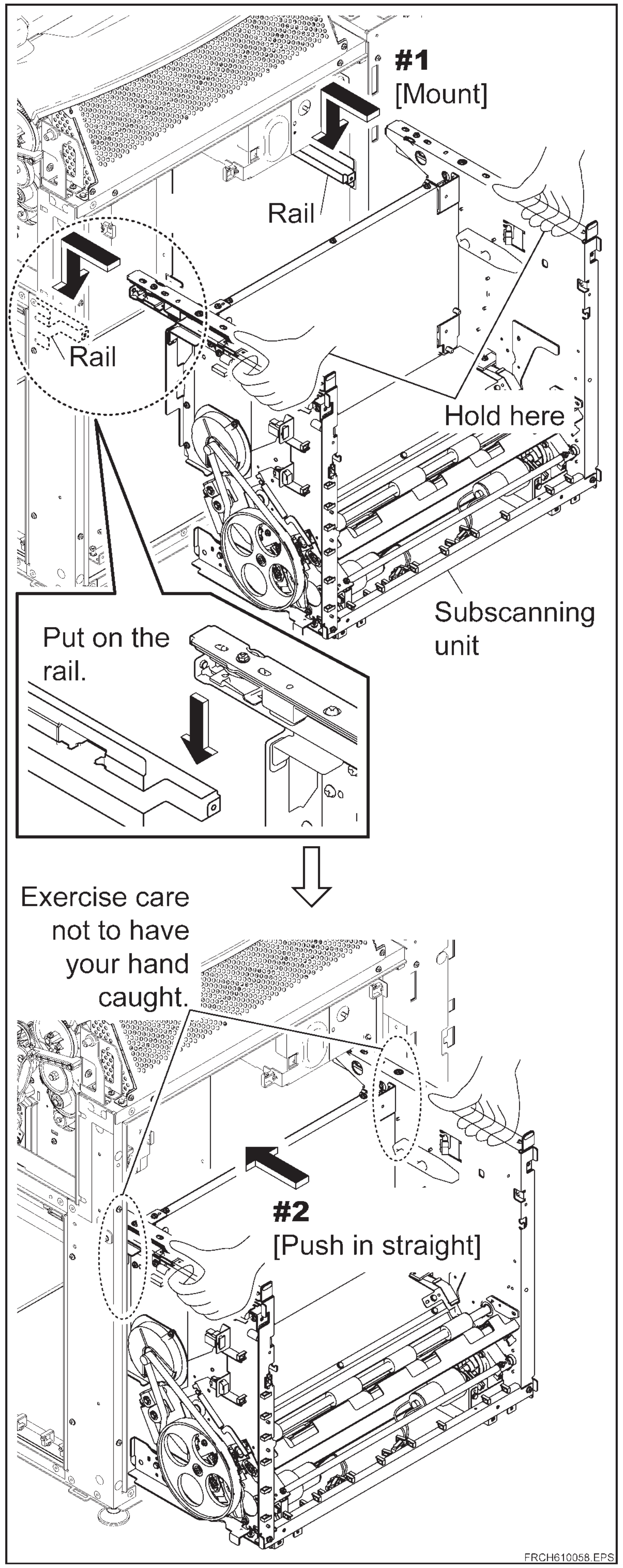
2. **Take the procedures from 3 to 6 from the direction indicated by the arrow in the figure.**


FRONT
FRCH610057.EPS

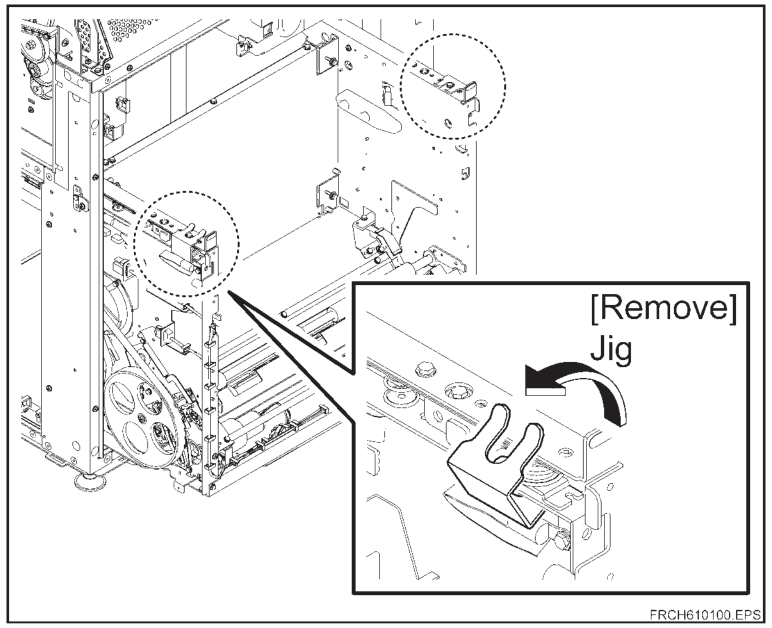
3. **Supporting the subscanning unit on the positions indicated in the figure, put the unit on the housing rails. Push the unit straight halfway.**

◆ ***NOTE*** ◆

Exercise care not to have your hand caught in the housing when pushing in the subscanning unit.


#1
[Mount]
Rail
Rail
Hold here
Put on the rail.
Subscanning unit
Exercise care not to have your hand caught.
#2
[Push in straight]
FRCH610058.EPS

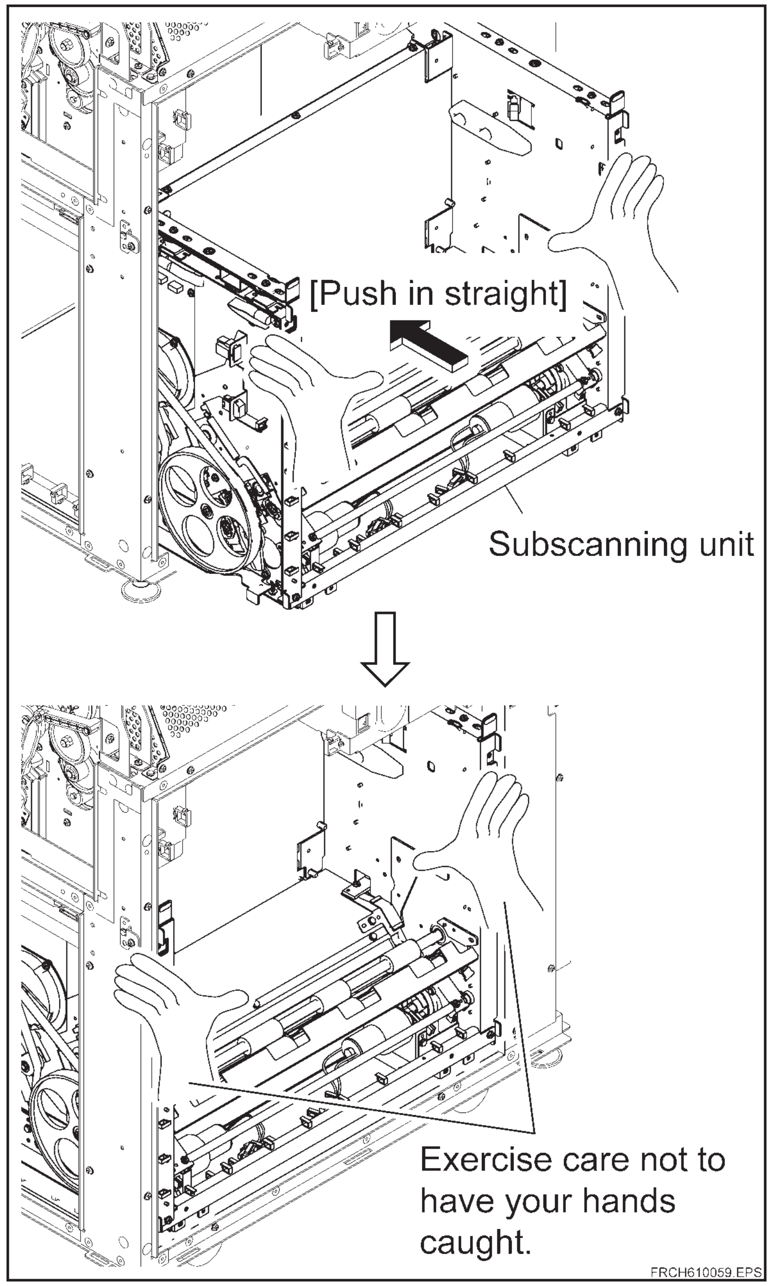
4. **Remove the jig.**


[Remove]
Jig
FRCH610100.EPS

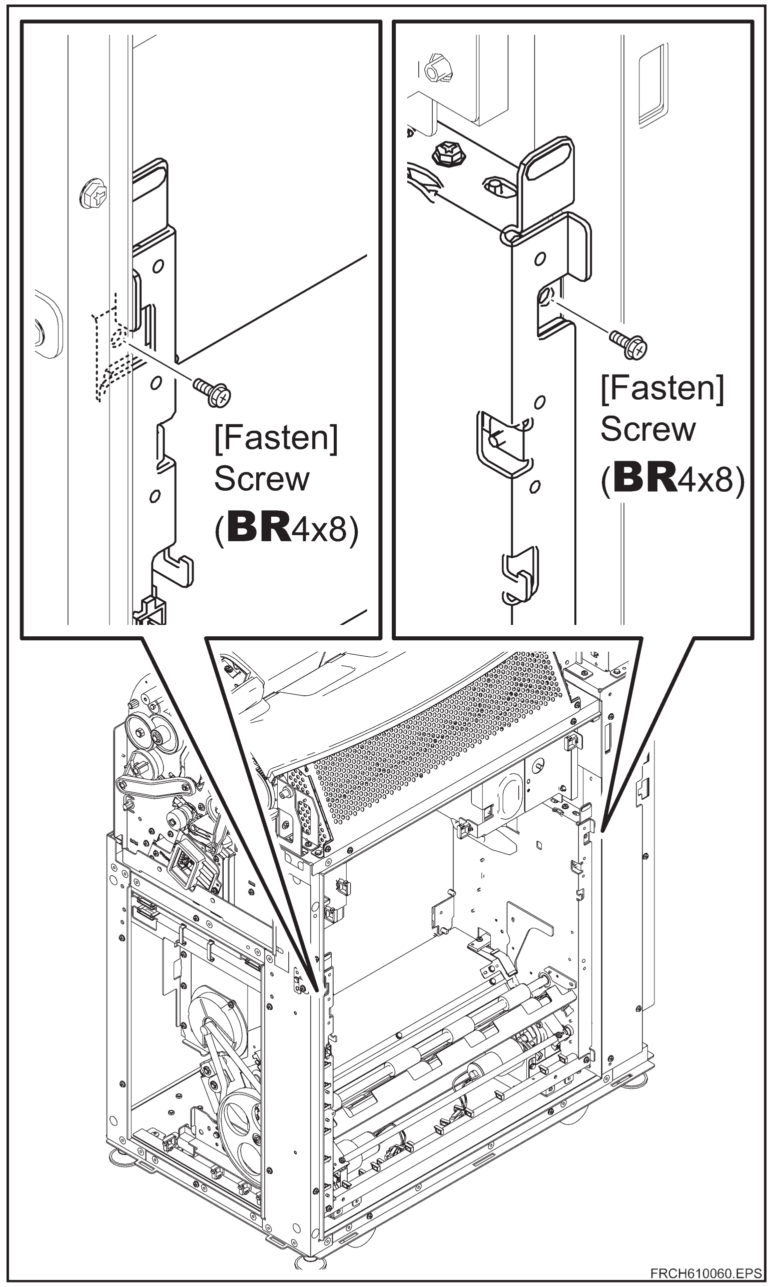
5. **Putting your hands on the positions indicated in the figure, push in the subscanning unit straight into the housing.**

◆ NOTES ◆

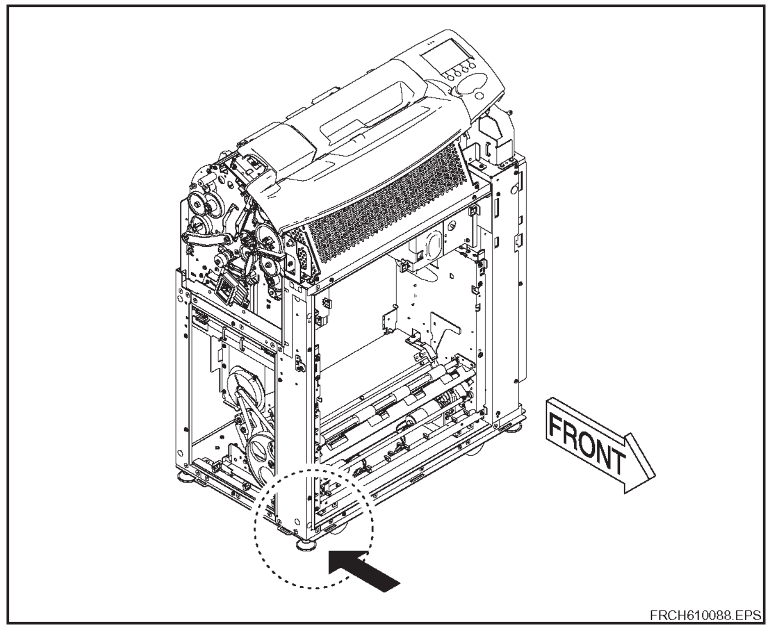
- *Be sure to put your hands on the specified positions to push in the subscanning unit straight. Otherwise, part of the subscanning unit might come into contact with the housing, causing damage.*
- *Exercise care not to have your hands caught in the housing when pushing in the subscanning unit.*


[Push in straight]
Subscanning unit
Exercise care not to have your hands caught.
FRCH610059.EPS

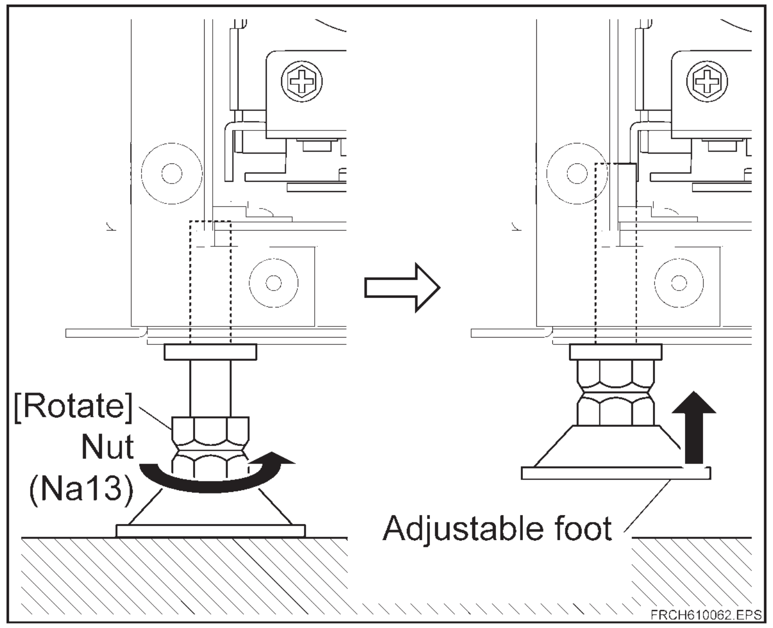
6. **Reinstall the retaining screws of the subscanning unit.**


[Fasten]
Screw
(**BR**4x8)
[Fasten]
Screw
(**BR**4x8)
FRCH610060.EPS

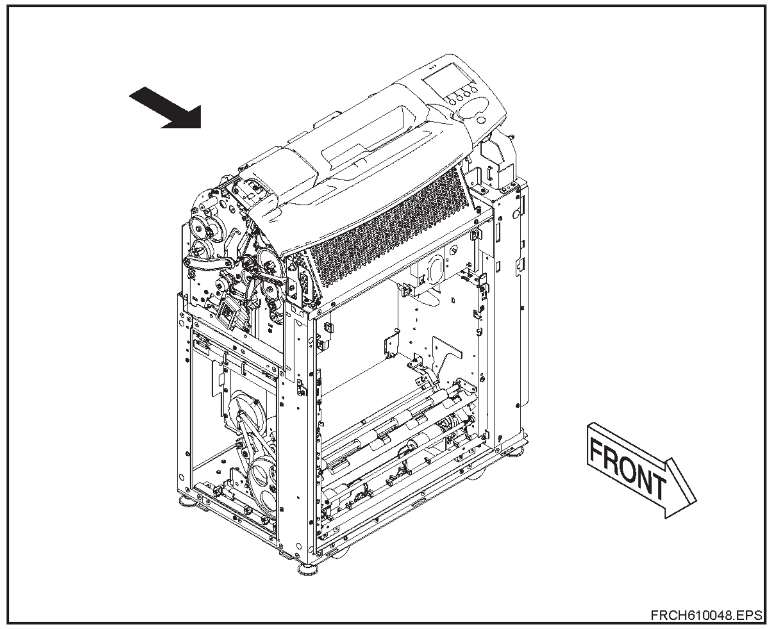
7. **Take the procedure 8 from the direction indicated by the arrow in the figure.**


FRONT
FRCH610088.EPS

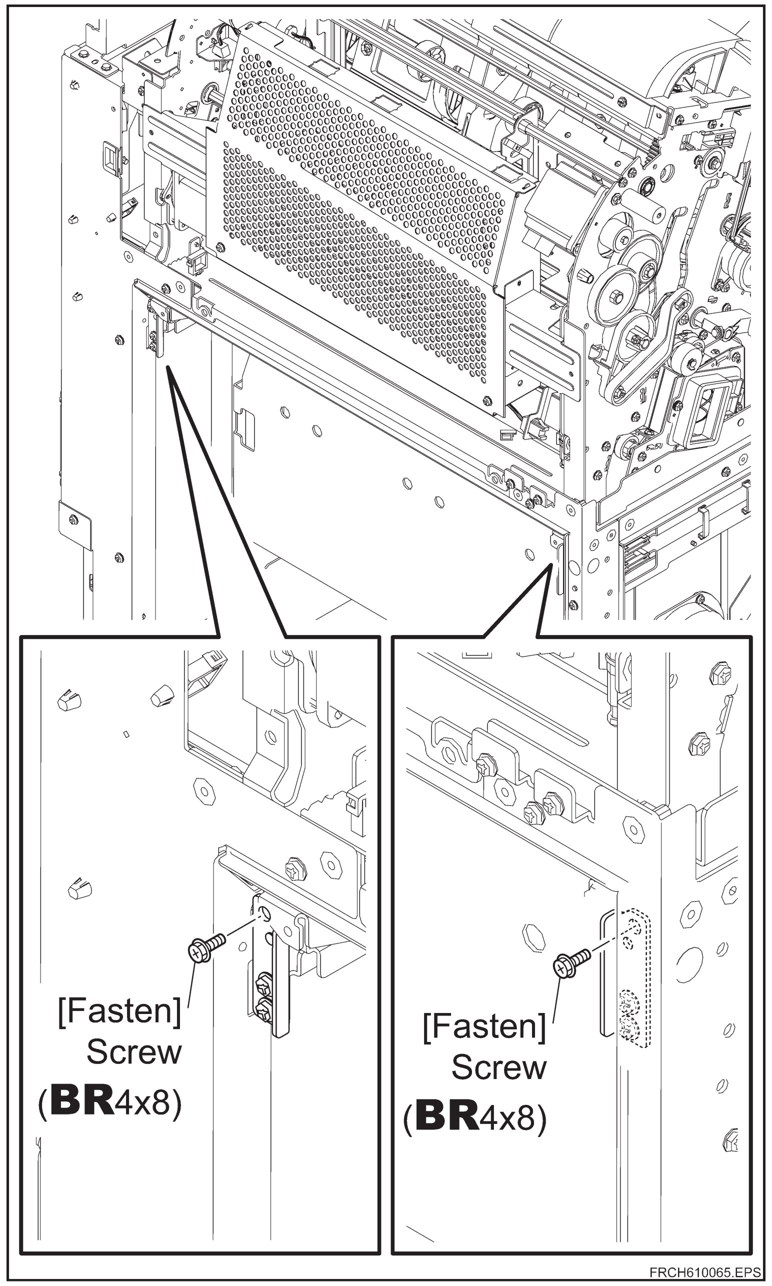
8. **Rotate the nut of the adjustable foot, and lift the adjustable foot.**


[Rotate]
Nut
(Na13)
Adjustable foot
FRCH610062.EPS

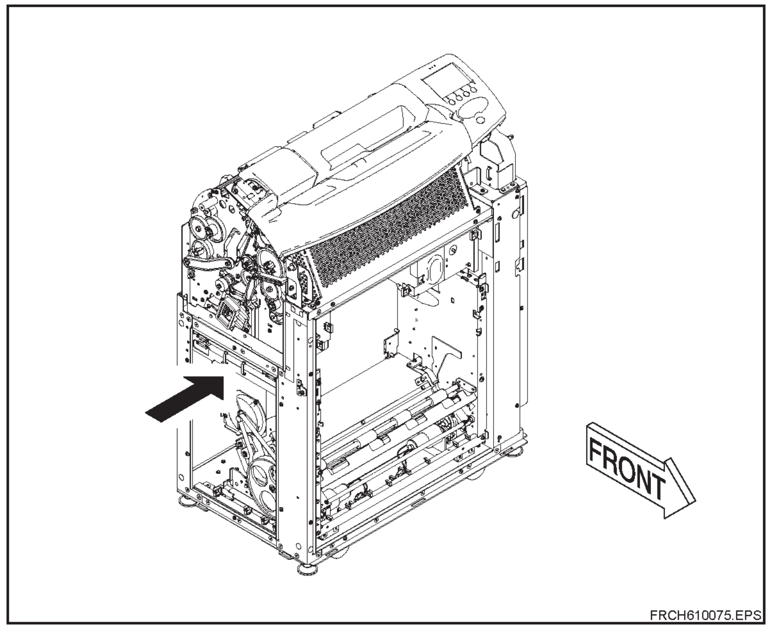
9. **Take the procedure 10 from the direction indicated by the arrow in the figure.**


FRONT
FRCH610048.EPS

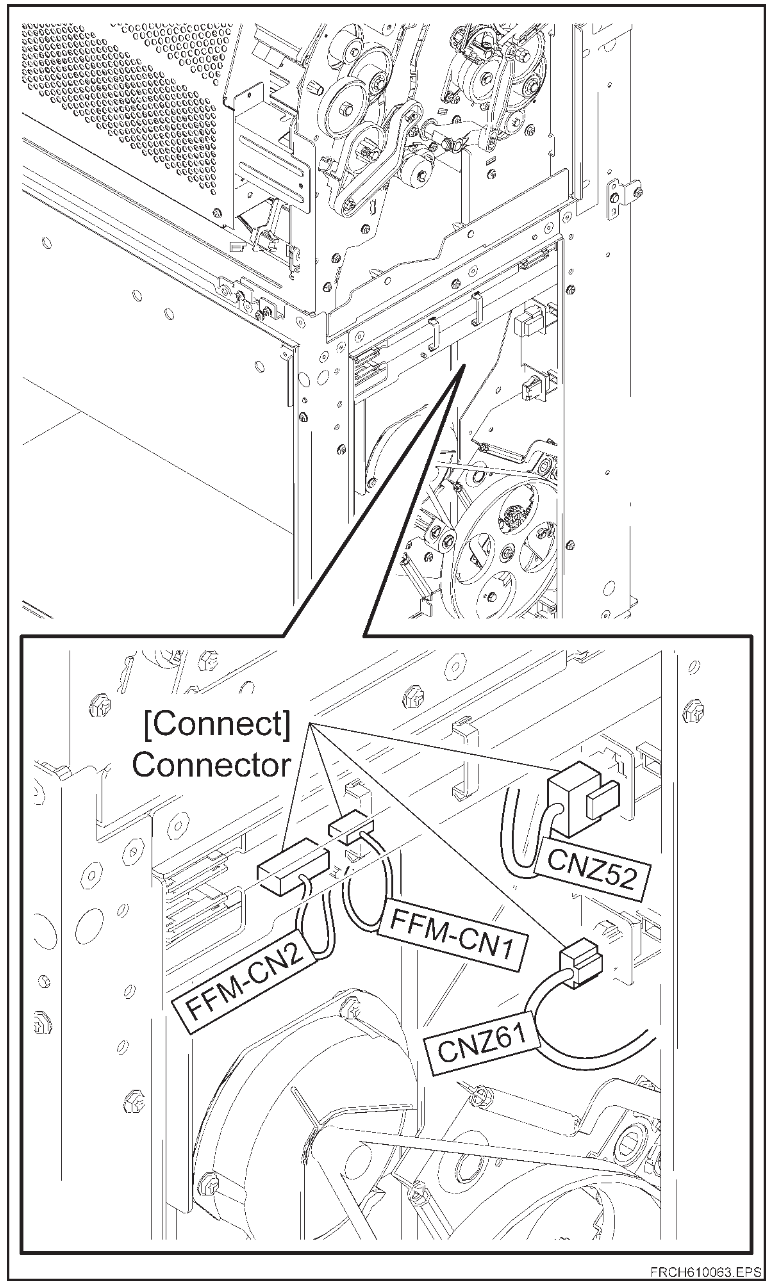
10. **Reinstall the retaining screws of the subscanning unit.**


[Fasten]
Screw
(BR4x8)
[Fasten]
Screw
(BR4x8)
FRCH610065.EPS

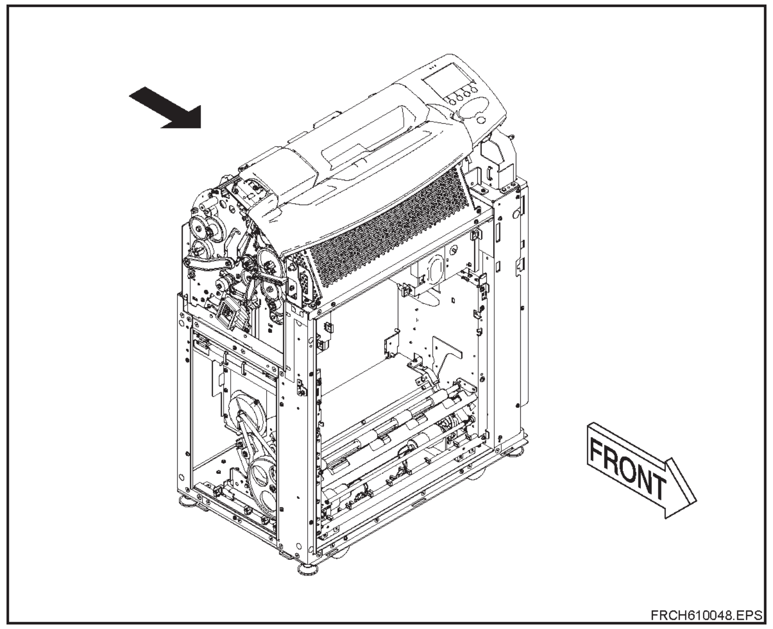
11. **Take the procedure 12 from the direction indicated by the arrow in the figure.**


FRONT
FRCH610075.EPS

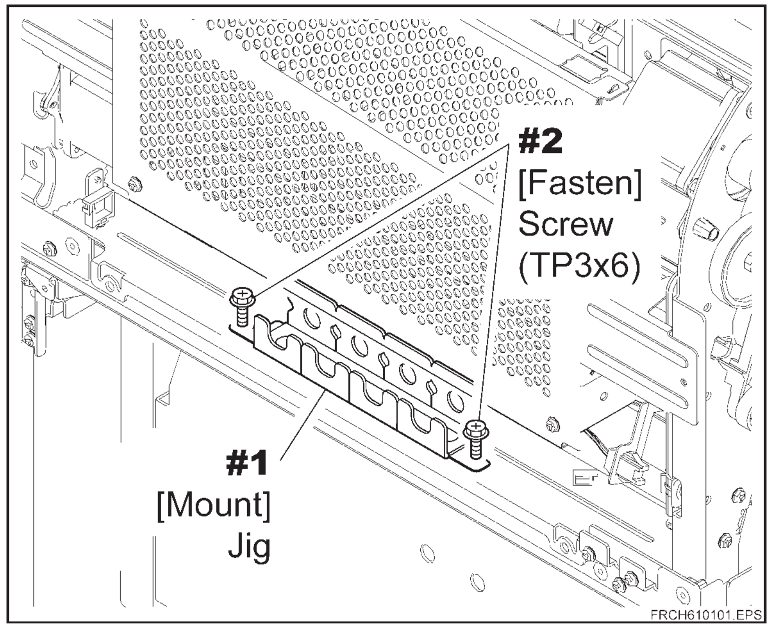
12. **Connect the connectors.**


[Connect]
Connector
CNZ52
FFM-CN1
FFM-CN2
CNZ61
FRCH610063.EPS

13. **Take the procedure 14 from the direction indicated by the arrow in the figure.**


FRONT
FRCH610048.EPS

14. **Mount the jig and then tighten the screws.**


#2
[Fasten]
Screw
(TP3x6)
#1
[Mount]
Jig
FRCH610101.EPS

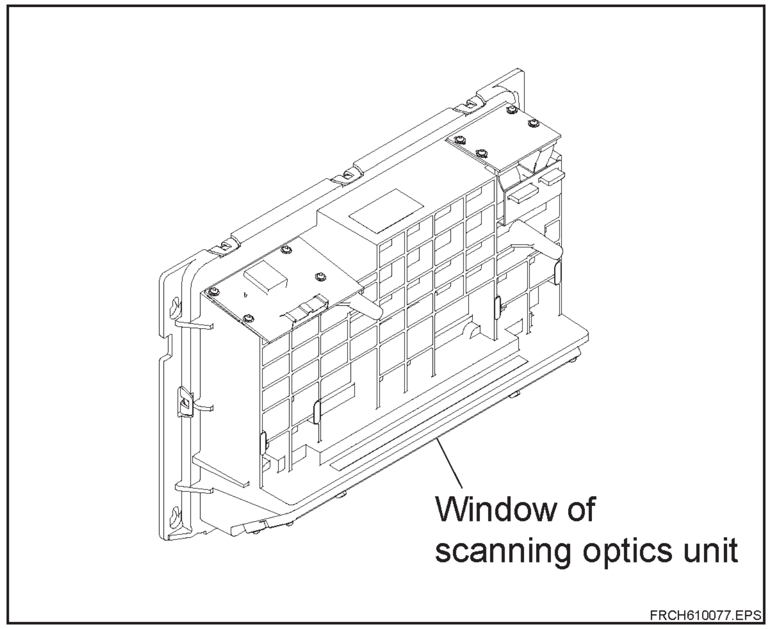
10.10 Reinstalling the Scanning Optics Unit

CAUTION

When servicing the scanning optics unit, be sure to wear an anti-static wristband to ground your body. If your body is not grounded, static electricity built on your body may cause damage to electronic parts on the board.

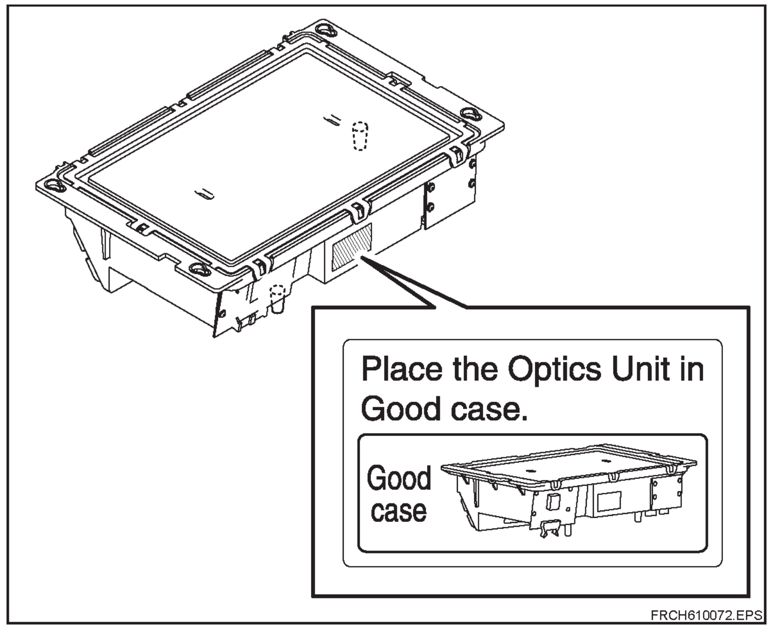
CAUTION

Never touch the window of the scanning optics unit. If fingerprints or the like are left on the window, the scanning optics unit must be replaced.


Window of
scanning optics unit
FRCH610077.EPS

◆ NOTE ◆

Place the scanning optics unit in the orientation as shown in the figure, according to the label indicating how to place the scanning optics unit.


Place the Optics Unit in
Good case.
Good
case
FRCH610072.EPS

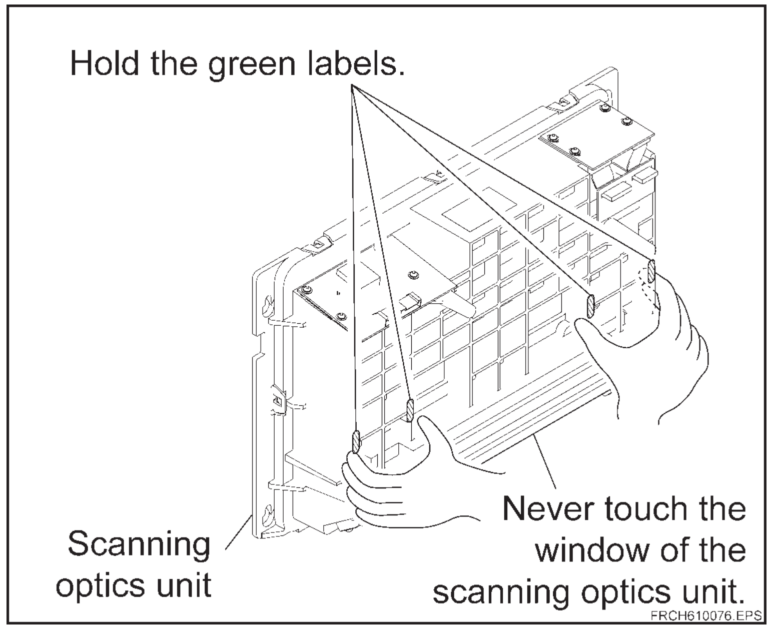
◆ INSTRUCTION ◆

Do not remove the top cover of the scanning optics unit.

1. **Hold the scanning optics unit on parts with the attached green labels.**

⚠ CAUTION

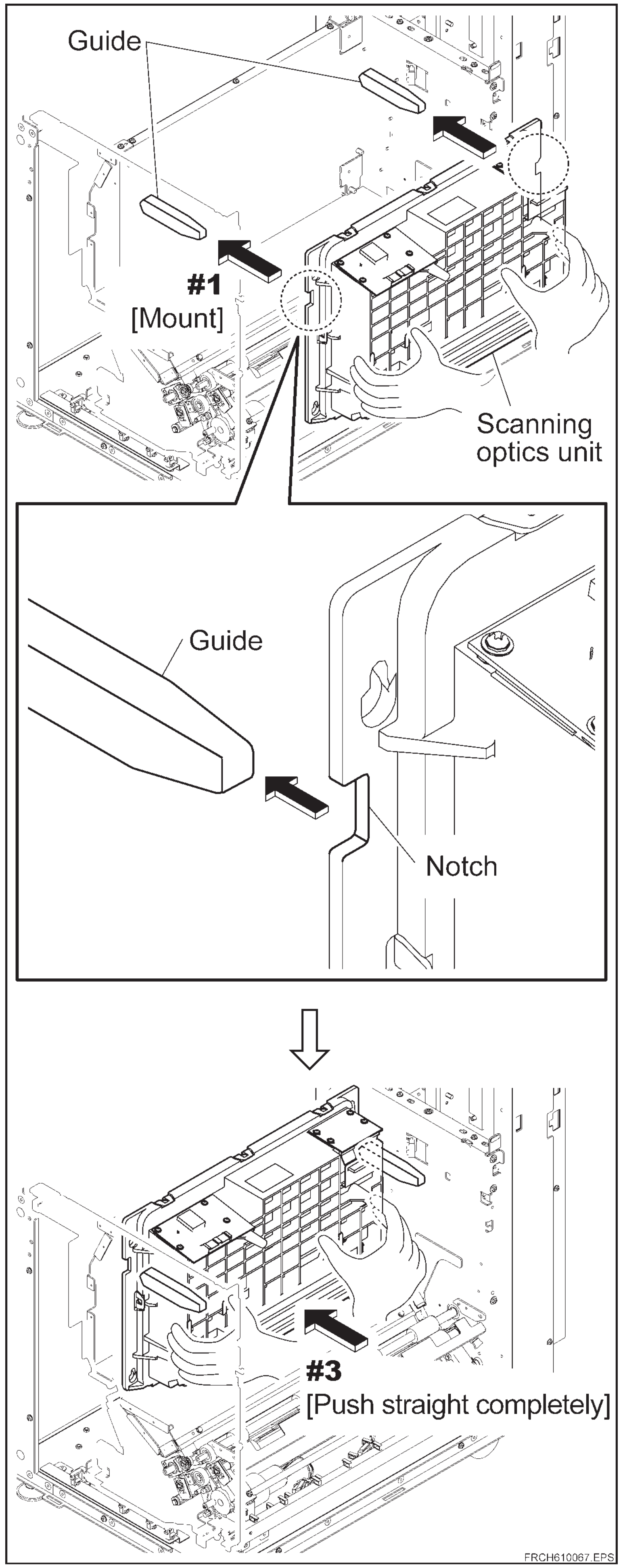
Never touch the window of the scanning optics unit. If fingerprints or the like are left on the window, the scanning optics unit must be replaced.


Hold the green labels.
Scanning optics unit
Never touch the window of the scanning optics unit.
FRCH610076.EPS

2. **Mount the notches on both sides of the scanning optics unit on the guides. Push straight completely while exercising care not to tilt the scanning optics unit.**

◆ NOTE ◆

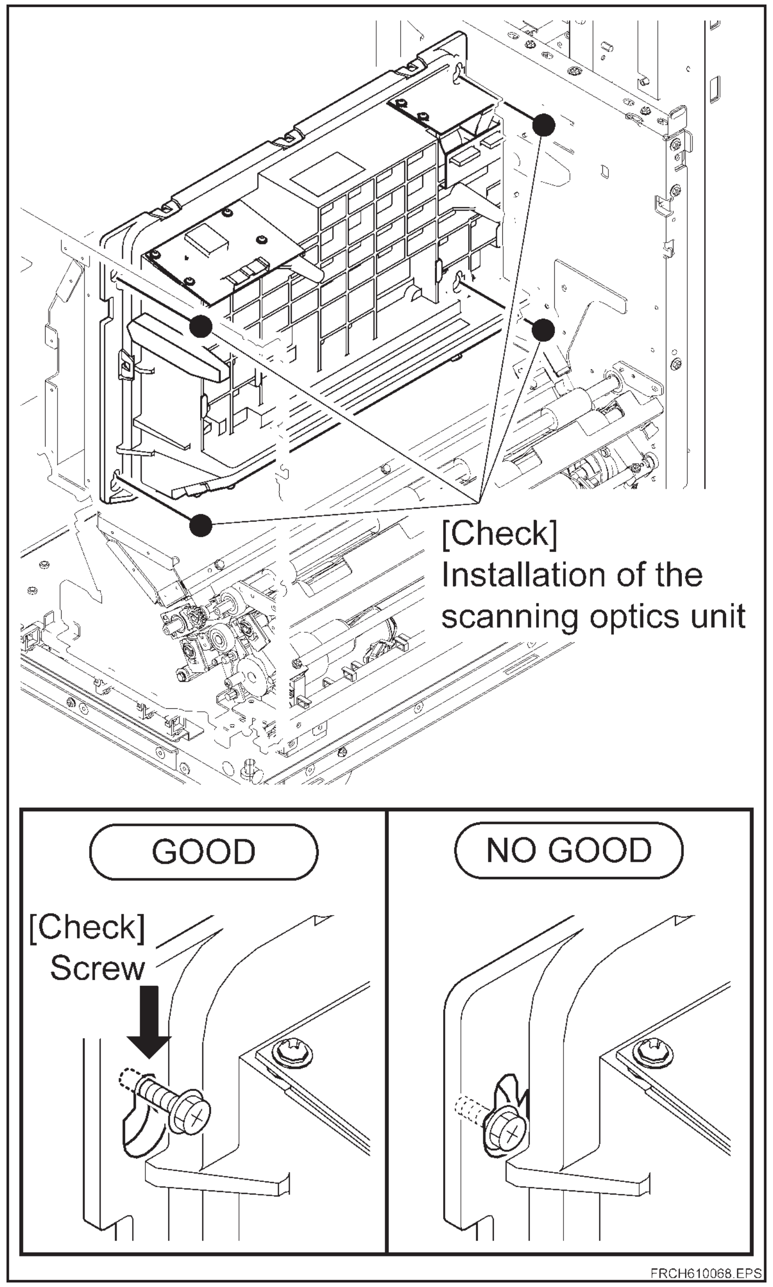
Push in the scanning optics unit straight along the guides not to permit it to tilt. If the unit is tilted, it may drop from the guides and result in damage of peripheral components or sensors.


Guide
#1
[Mount]
Scanning optics unit
Guide
Notch
#3
[Push straight completely]
FRCH610067.EPS

3. **Be sure to check that the scanning optics unit is correctly placed on the retaining screws.**

◆ NOTE ◆

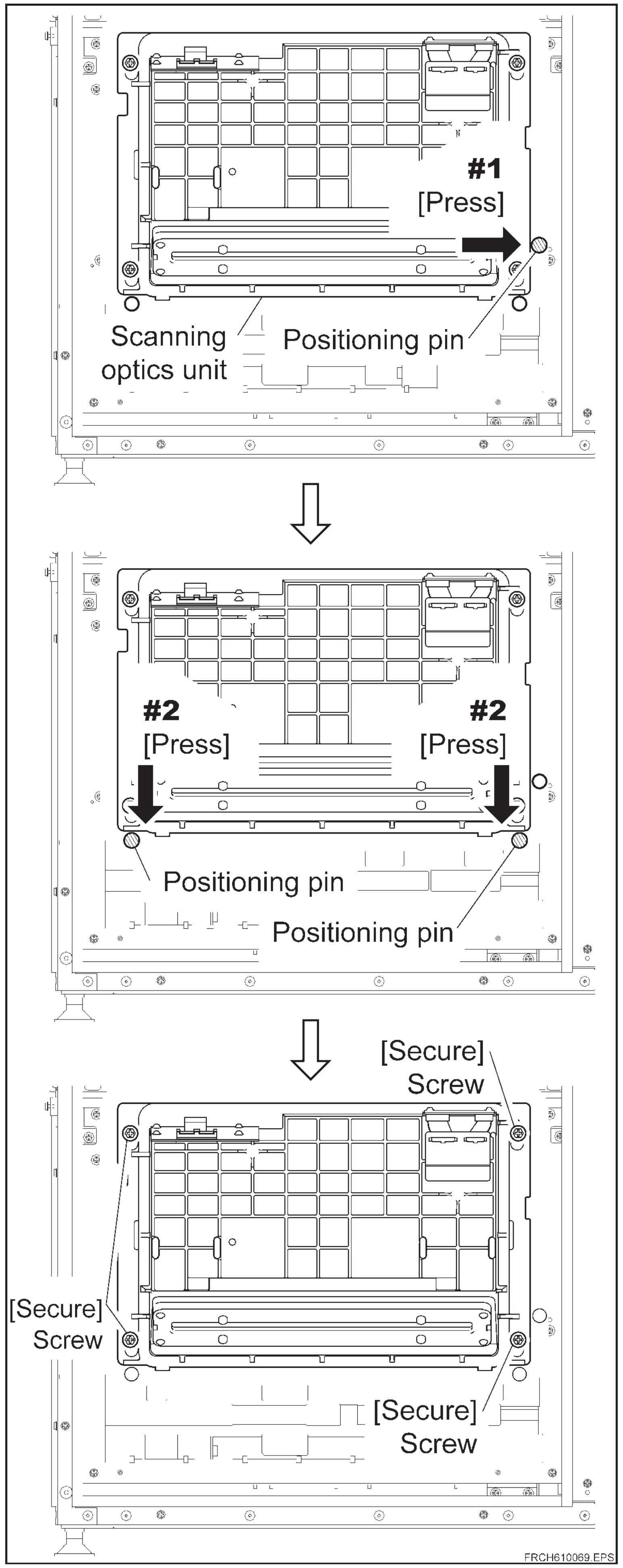
Make sure that the scanning optics unit is correctly placed on the retaining screws. If the screw head is not in the correct position in the hole of the scanning optics unit, the unit cannot be installed correctly.
If the screw head is not in the correct position, reinstall the unit again and recheck.


[Check]
Installation of the scanning optics unit
GOOD
[Check]
Screw
NO GOOD
FRCH610068.EPS

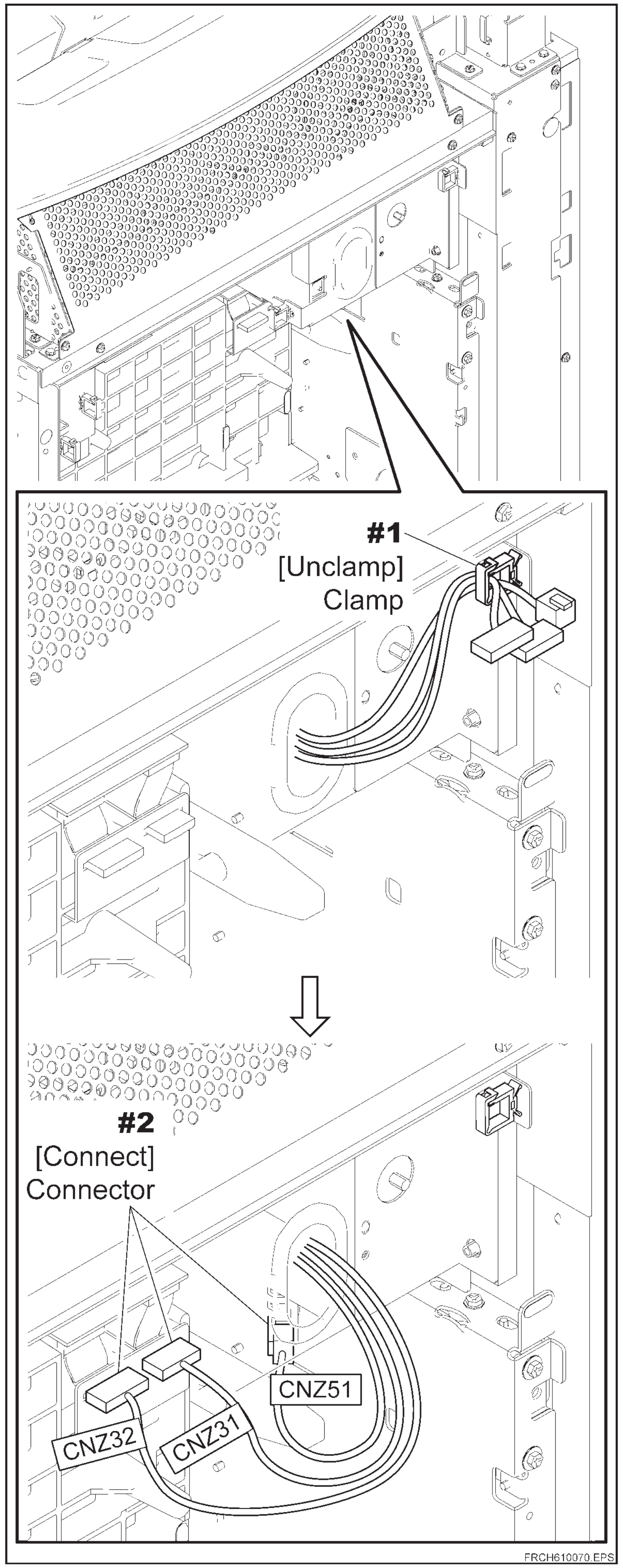
4. **Secure the retaining screws while pushing the scanning optics unit against the positioning pin.**

◆ NOTE ◆

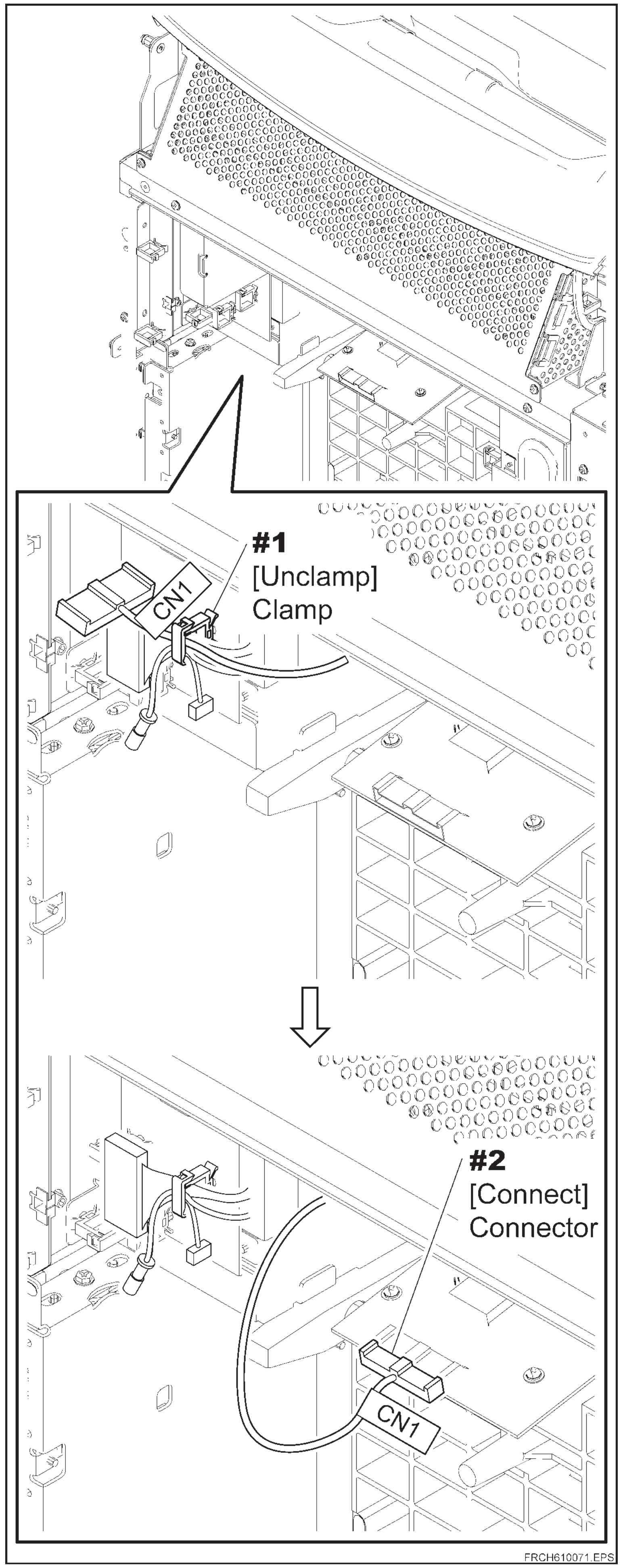
Be sure to retain the retaining screw while pushing the scanning optics unit against the positioning pin. By pushing the scanning optics unit tightly against the positioning pin, the unit is located in the correct position.


#1
[Press]
Scanning optics unit
Positioning pin
#2
[Press]
#2
[Press]
Positioning pin
Positioning pin
[Secure]
Screw
[Secure]
Screw
[Secure]
Screw
FRCH610069.EPS

5. **Unclamp the clamp and connect the connectors.**


#1
[Unclamp]
Clamp
#2
[Connect]
Connector
CNZ51
CNZ32
CNZ31
FRCH610070.EPS

6. **Unclamp the clamp and connect the connector.**


CN1
#1
[Unclamp]
Clamp
#2
[Connect]
Connector
CN1
FRCH610071.EPS

11. Light-Collecting Guide

11.1 Cleaning and Reinstalling the Light-Collecting Guide

⚠ CAUTIONS

- ***Never touch the light-receiving face of the light-collecting unit even when you are wearing gloves.***
- ***Do not wipe the light-collecting guide with a dry cloth. If so, the lightcollecting guide may be scratched or otherwise damaged.***
- ***If the lens cleaning paper becomes soiled, replace it with a new one.***
- ***Wipe the light-collecting surface of the light-collecting guide until the lens cleaning paper becomes no longer soiled.***
- ***Wipe the light-collecting guide assembly in one direction at a constant speed.***
- ***Do not wipe the photomultiplier attachment face.***

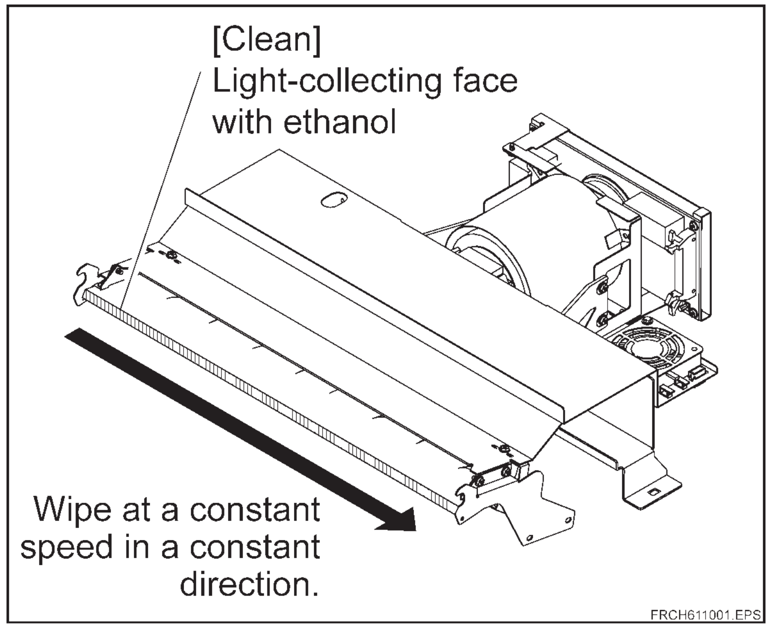
◆ INSTRUCTION◆

When servicing the light-collecting unit, wear gloves.

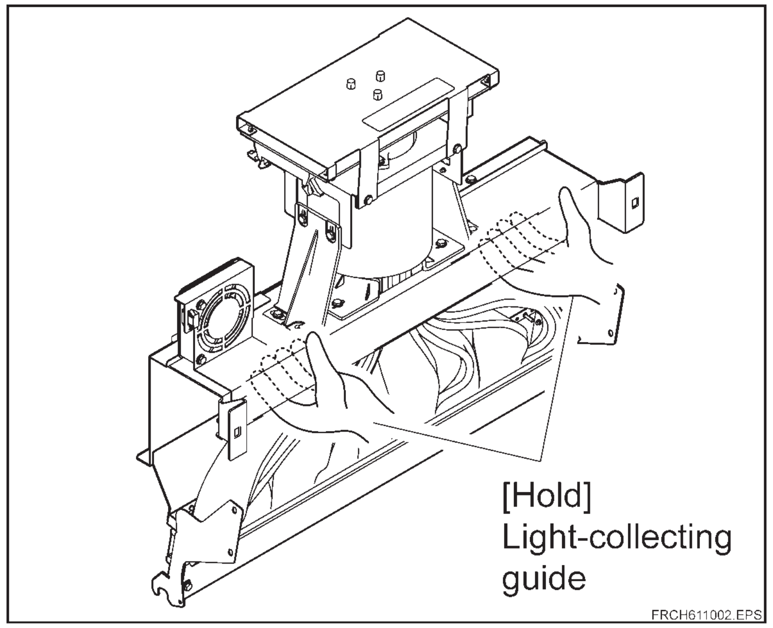
1. Clean the light-collecting face of the light-collecting guide by use of ethanol.

◇ REFERENCE ◇

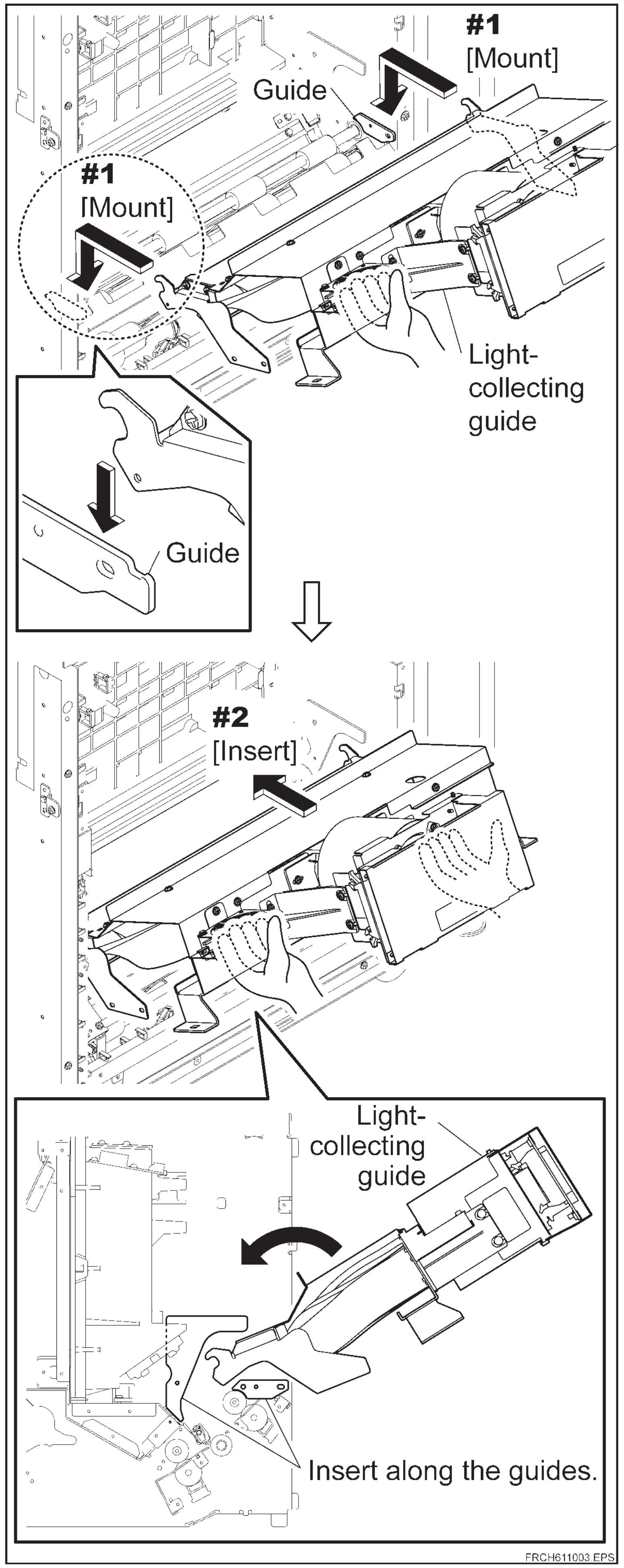
To clean the light-collecting guide, two sheets of lens cleaning paper should be folded in four and then moistened with ethanol.


[Clean]
Light-collecting face
with ethanol
Wipe at a constant
speed in a constant
direction.
FRCH611001.EPS

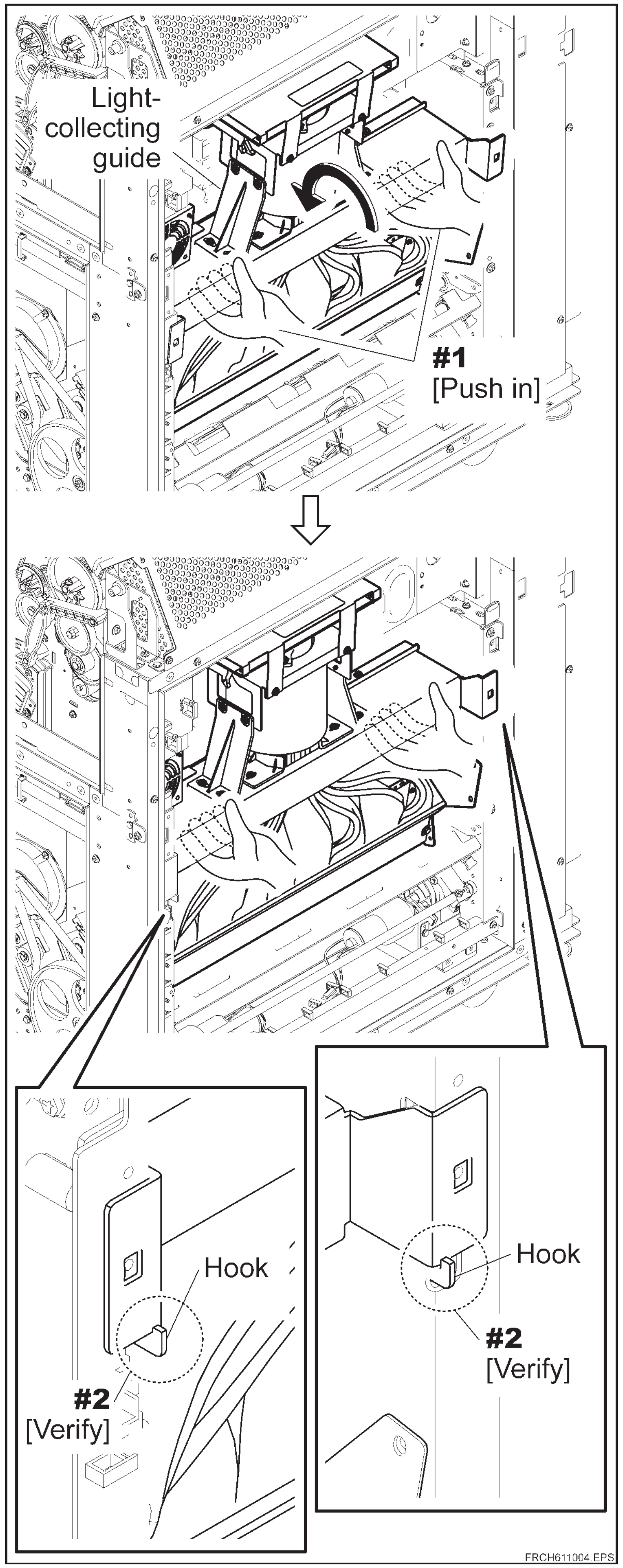
2. Hold the light collecting guide as indicated in the figure.


[Hold]
Light-collecting
guide
FRCH611002.EPS

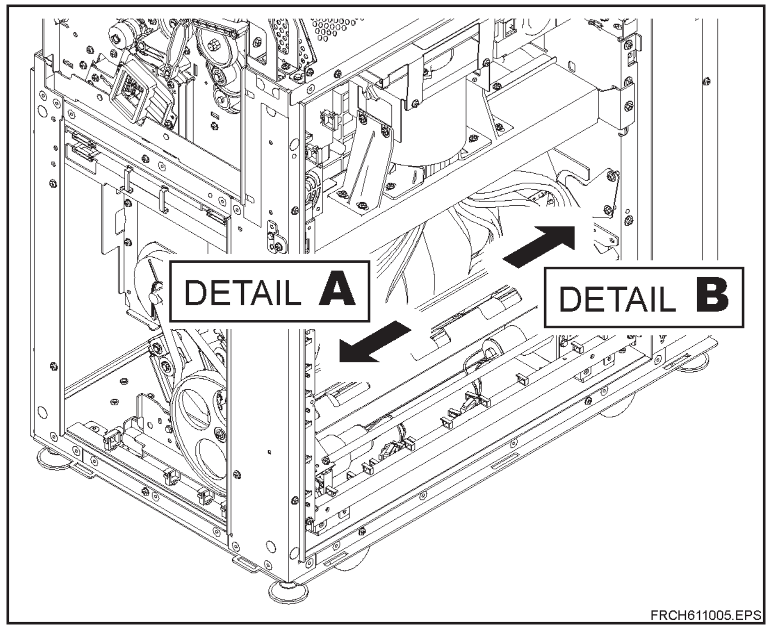
3. **Mount the light-collecting guide on the guides of the subscanning unit. Insert the light-collecting guide along the guides into the subscanning unit.**


#1
[Mount]
Guide
#1
[Mount]
Light-
collecting
guide
Guide
#2
[Insert]
Light-
collecting
guide
Insert along the guides.
FRCH611003.EPS

4. **Push in the light-collecting guide while slightly raising it. Check to make sure that the guide is correctly engaged with the hooks of the subscanning unit side plate.**


Light-
collecting
guide
#1
[Push in]
Hook
#2
[Verify]
Hook
#2
[Verify]
FRCH611004.EPS

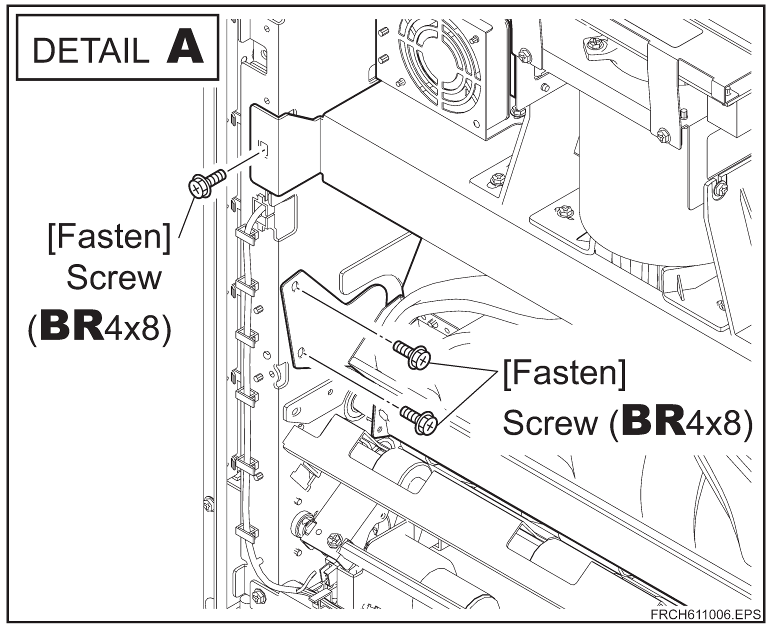
5. Take the procedures 6 and 7 from the direction indicated by the arrow in the figure.


DETAIL A
DETAIL B
FRCH611005.EPS

6. Reinstall the retaining screws of the light-collecting guide from the direction instructed in DETAIL A.

◆ NOTE ◆

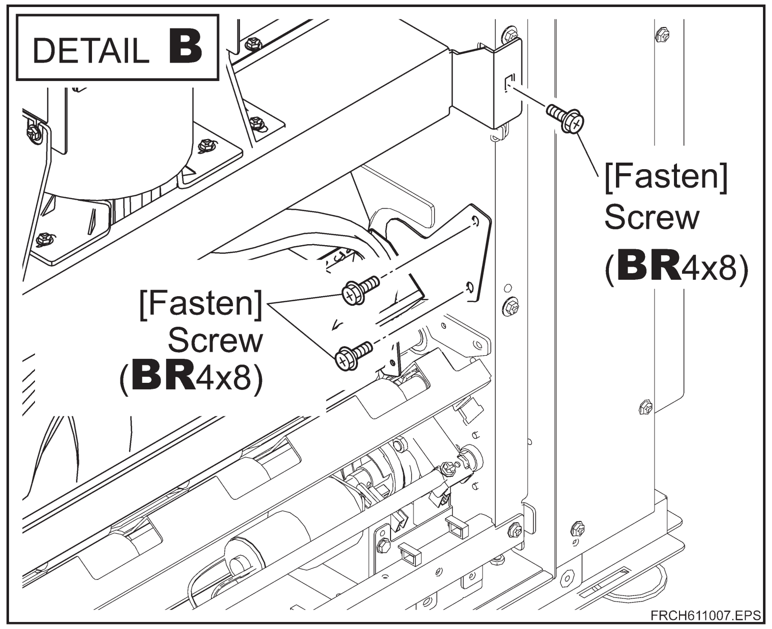
Exercise care not to damage the acrylic part of the light-collecting guide with a screwdriver when reinstalling the screws.


DETAIL A
[Fasten]
Screw
(BR4x8)
[Fasten]
Screw (BR4x8)
FRCH611006.EPS

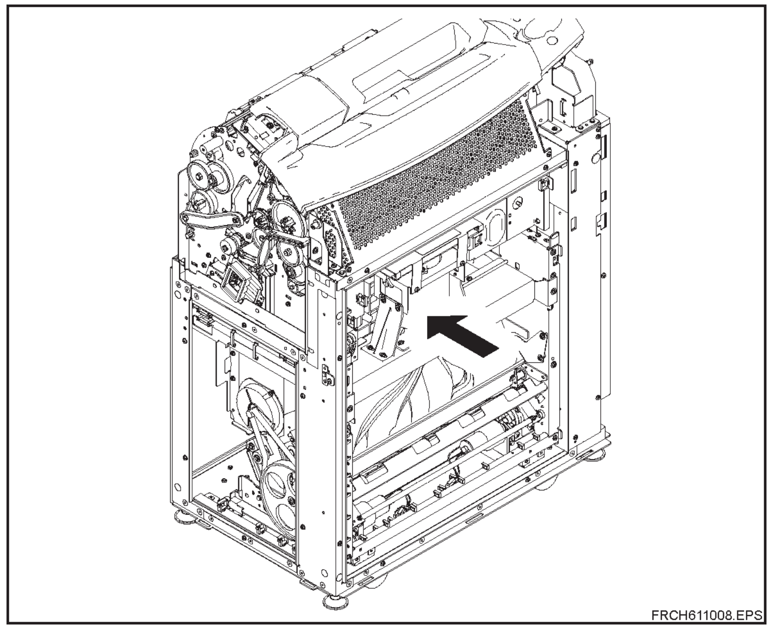
7. Reinstall the retaining screws of the light-collecting guide from the direction instructed in DETAIL B.

◆ NOTE ◆

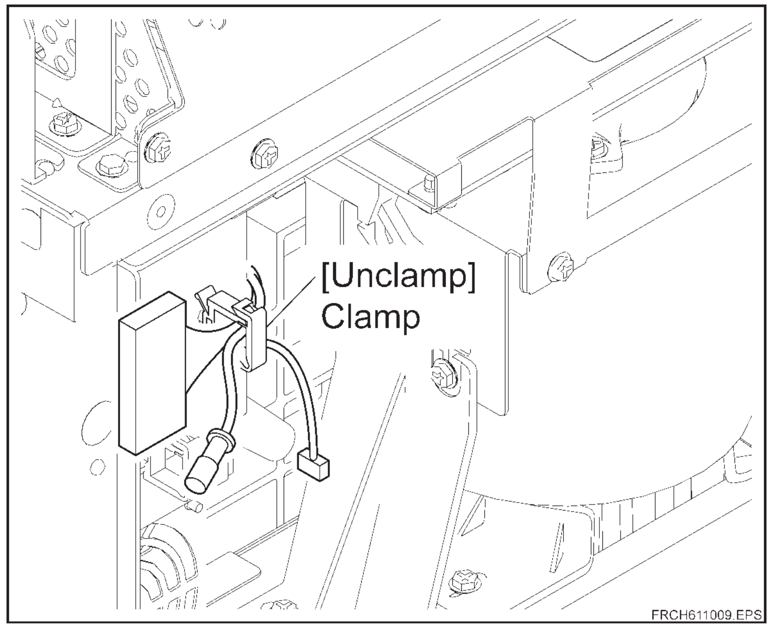
Exercise care not to damage the acrylic part of the light-collecting guide with a screwdriver when reinstalling the screws.


DETAIL B
[Fasten]
Screw
(BR4x8)
[Fasten]
Screw
(BR4x8)
FRCH611007.EPS

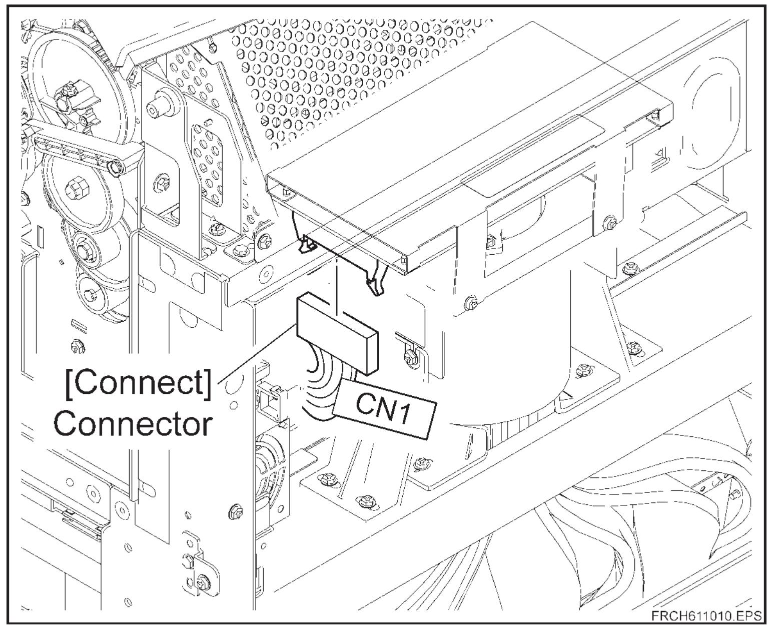
8. Take the procedures from 9 to 12 from the direction indicated by the arrow in the figure.


FRCH611008.EPS

9. Unclamp the clamps.


[Unclamp]
Clamp
FRCH611009.EPS

10. Connect the connector.


[Connect]
Connector
CN1
FRCH611010.EPS

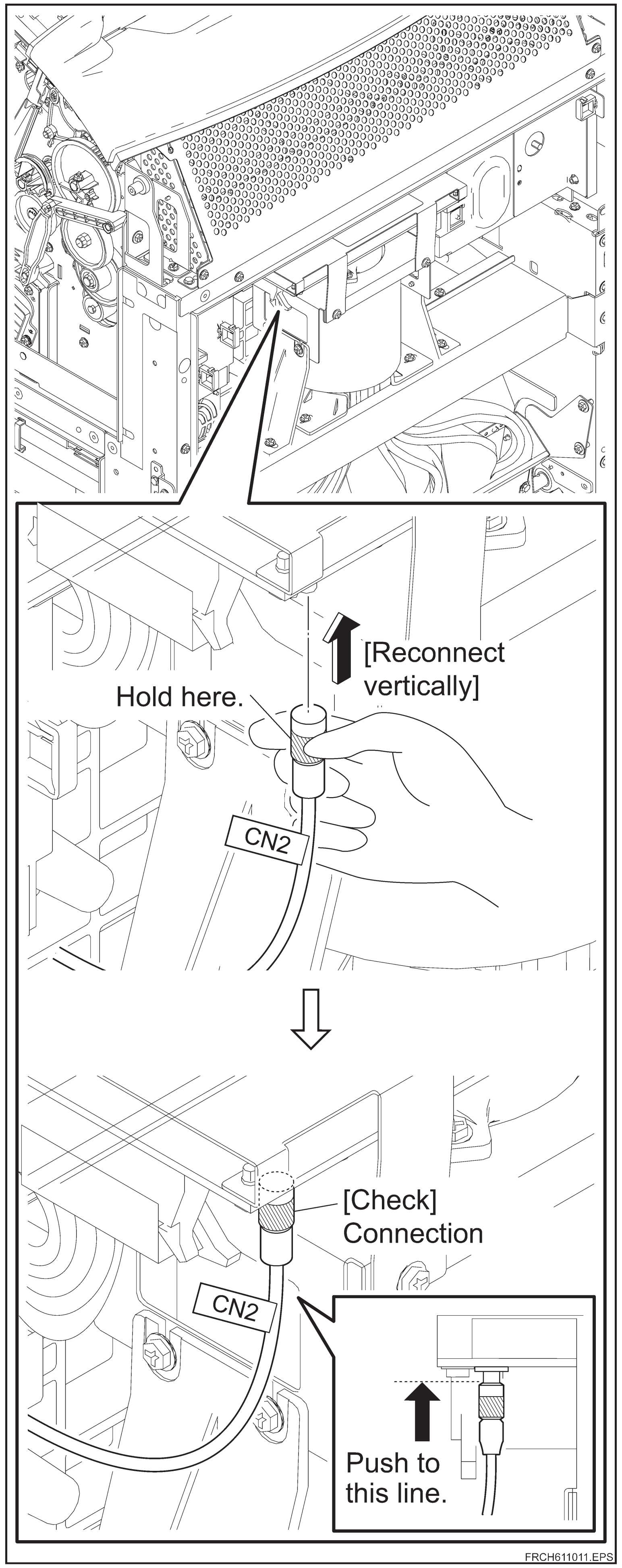
11. **Reconnect the connector vertically, holding the shaded portion in the figure. Check that the connector is fully inserted into its position as shown.**

⚠ CAUTION

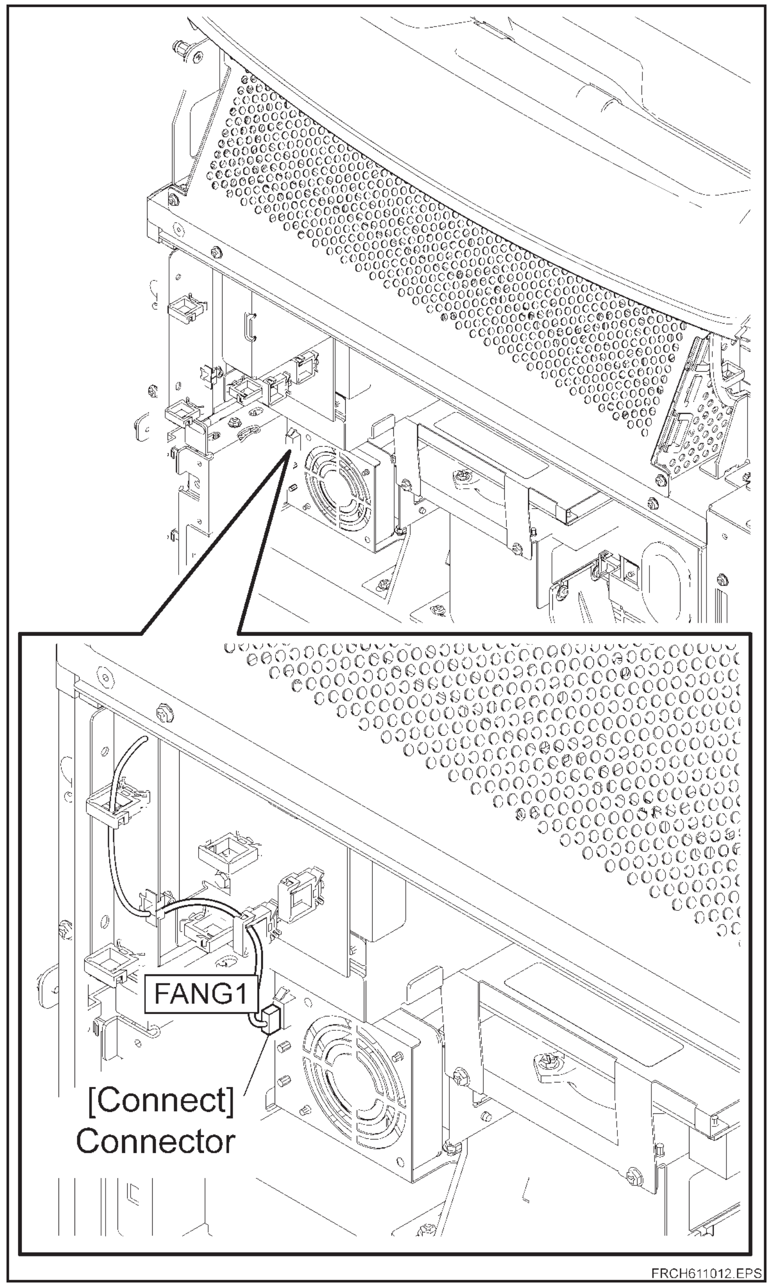
Be sure to check that the connector is fully inserted into its position as shown. If the connector is not properly connected, an error occurs during image reading.

◆ NOTES ◆

- *Be sure to hold the specified portion to reconnect the connector. Otherwise, the cable may get damaged.*
- *Connect the connector vertically to the board. If it is connected in a rotated state, the connector might get damaged.*
- *As the working space is small, exercise care not to get injured by peripheral components when connecting the connector.*

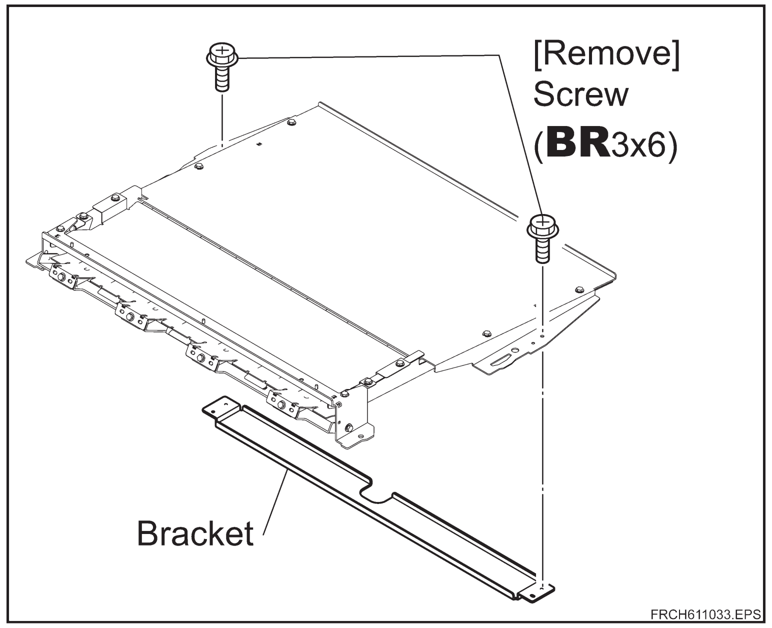

[Reconnect vertically]
Hold here.
CN2
[Check] Connection
CN2
Push to this line.
FRCH611011.EPS

12. **Connect the connector.**

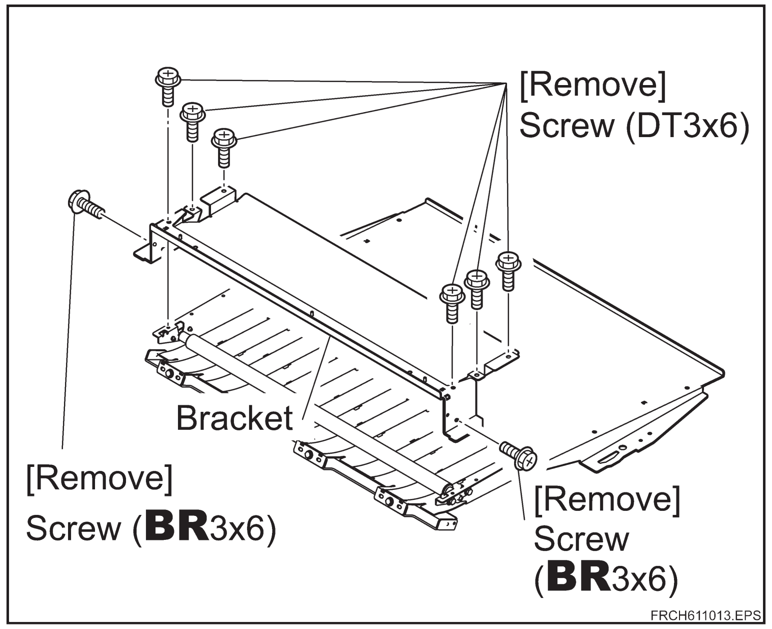

FANG1
[Connect] Connector
FRCH611012.EPS

11.2 Cleaning the Post-Reading Conveyor Guide Assembly

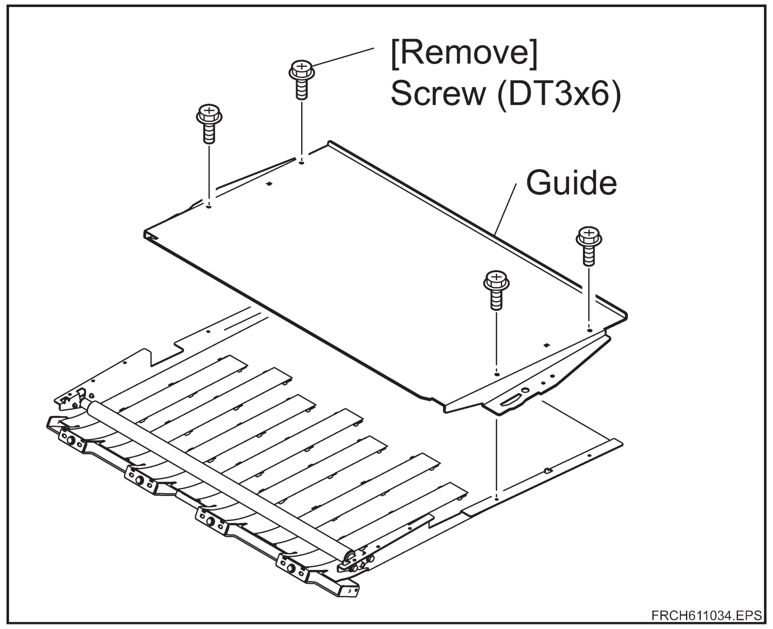
1. **Remove the bracket.**


[Remove]
Screw
(BR3x6)
Bracket
FRCH611033.EPS

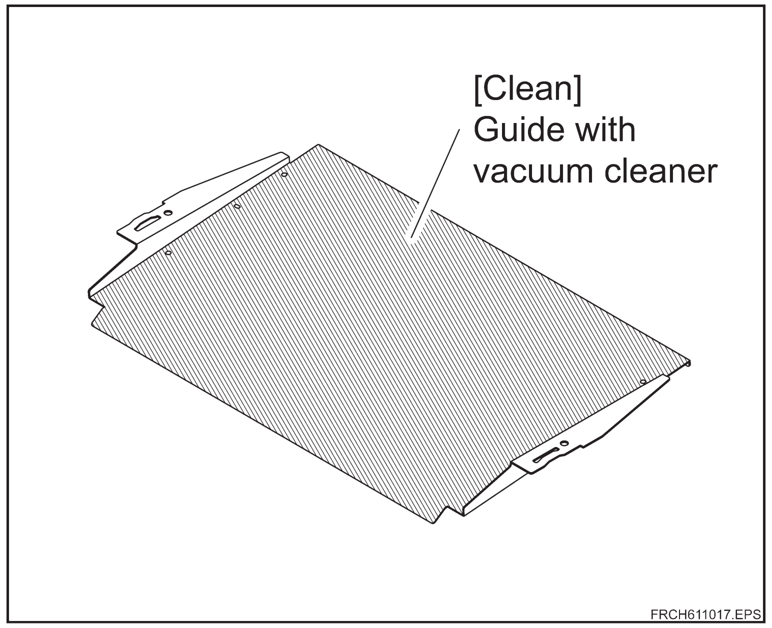
2. **Remove the bracket.**


[Remove]
Screw (DT3x6)
Bracket
[Remove]
Screw (BR3x6)
[Remove]
Screw
(BR3x6)
FRCH611013.EPS

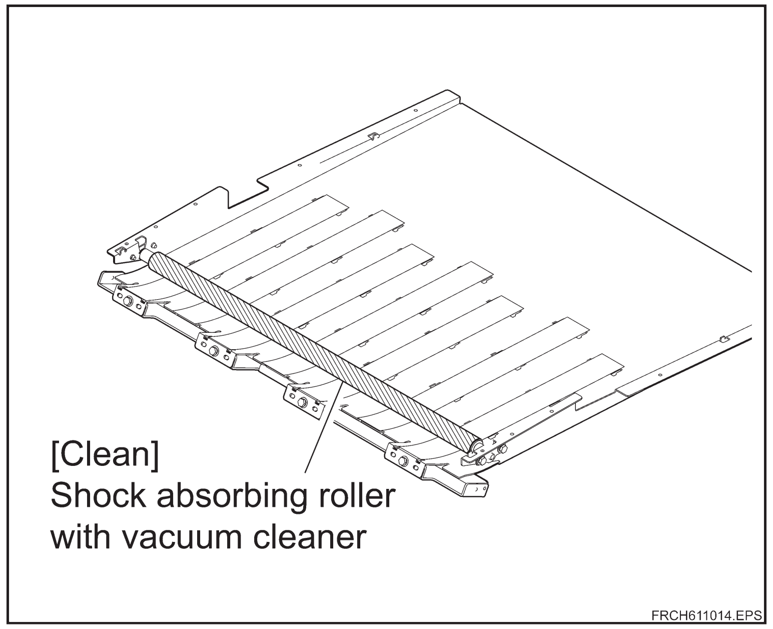
3. **Remove the guide.**


[Remove]
Screw (DT3x6)
Guide
FRCH611034.EPS

4. **Clean the guide with a vacuum cleaner.**


[Clean]
Guide with
vacuum cleaner
FRCH611017.EPS

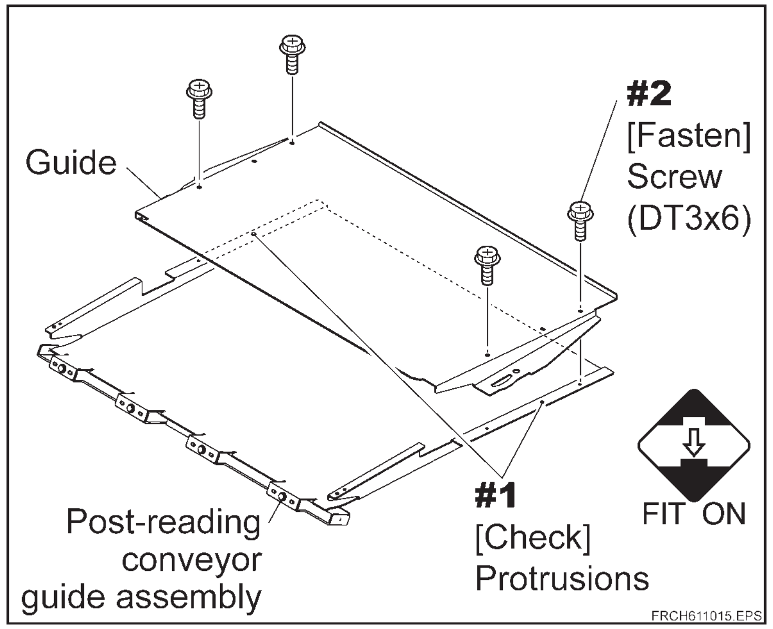
5. **Clean the shock absorbing roller with a vacuum cleaner.**


[Clean]
Shock absorbing roller
with vacuum cleaner
FRCH611014.EPS

6. **Check to make sure that the guide is correctly fitted onto the protrusions, before reinstalling the screws.**

◆ NOTES ◆

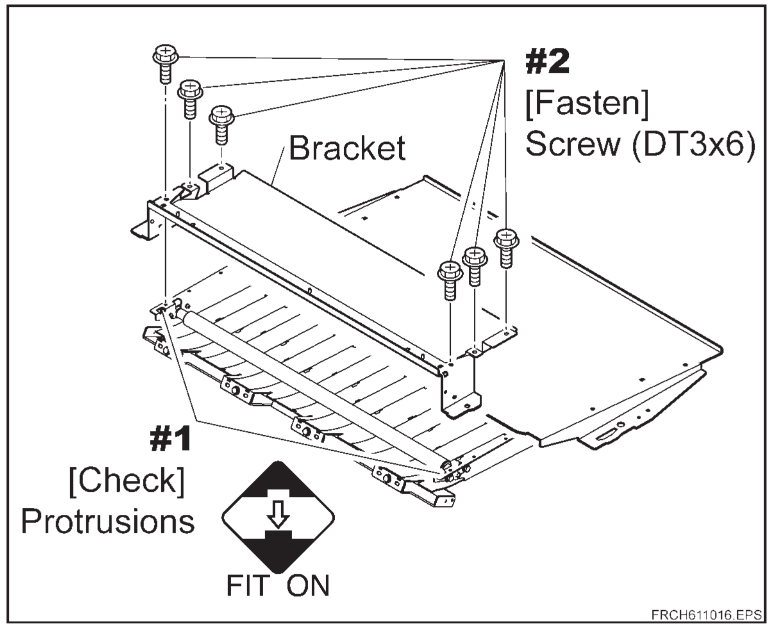
- *Exercise care in the orientation of installing the guide.*
- *Be sure to check that the guide is correctly fitted on to the protrusions of the post-reading conveyor guide assembly, before reinstalling the screws.*


Guide
#2
[Fasten]
Screw
(DT3x6)
#1
[Check]
Protrusions
Post-reading
conveyor
guide assembly
FIT ON
FRCH611015.EPS

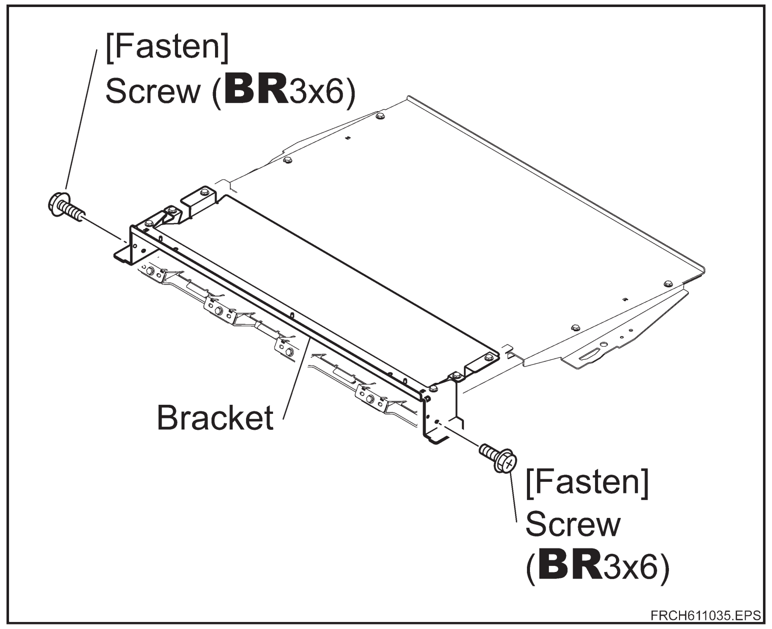
7. **Check to make sure that the bracket is correctly fitted onto the protrusions, before reinstalling the screws.**

◆ NOTE ◆

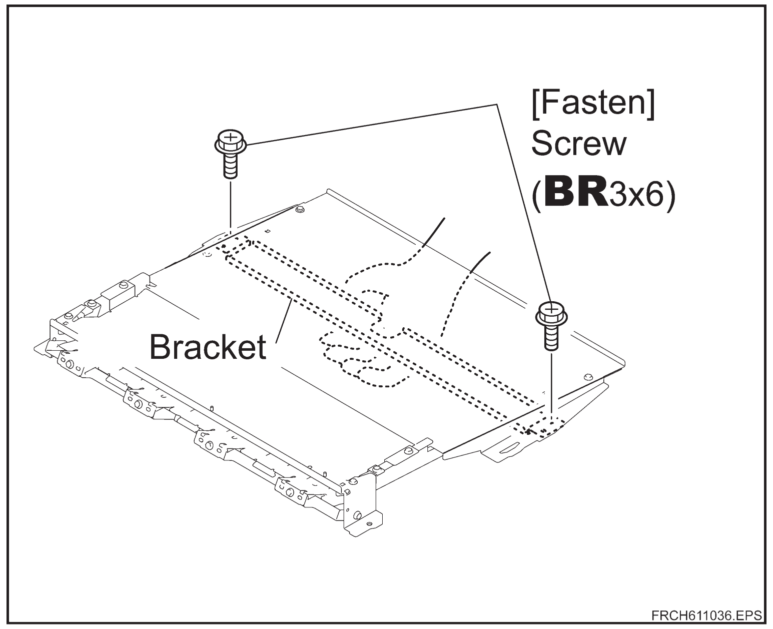
Be sure to check that the bracket is correctly fitted onto the protrusions of the post-reading conveyor guide assembly, before reinstalling the screws.


#2
[Fasten]
Screw (DT3x6)
Bracket
#1
[Check]
Protrusions
FIT ON
FRCH611016.EPS

8. **Install the screws to secure the bracket.**


[Fasten]
Screw (BR3x6)
Bracket
[Fasten]
Screw
(BR3x6)
FRCH611035.EPS

9. **Install the screws while pressing down on the bracket.**

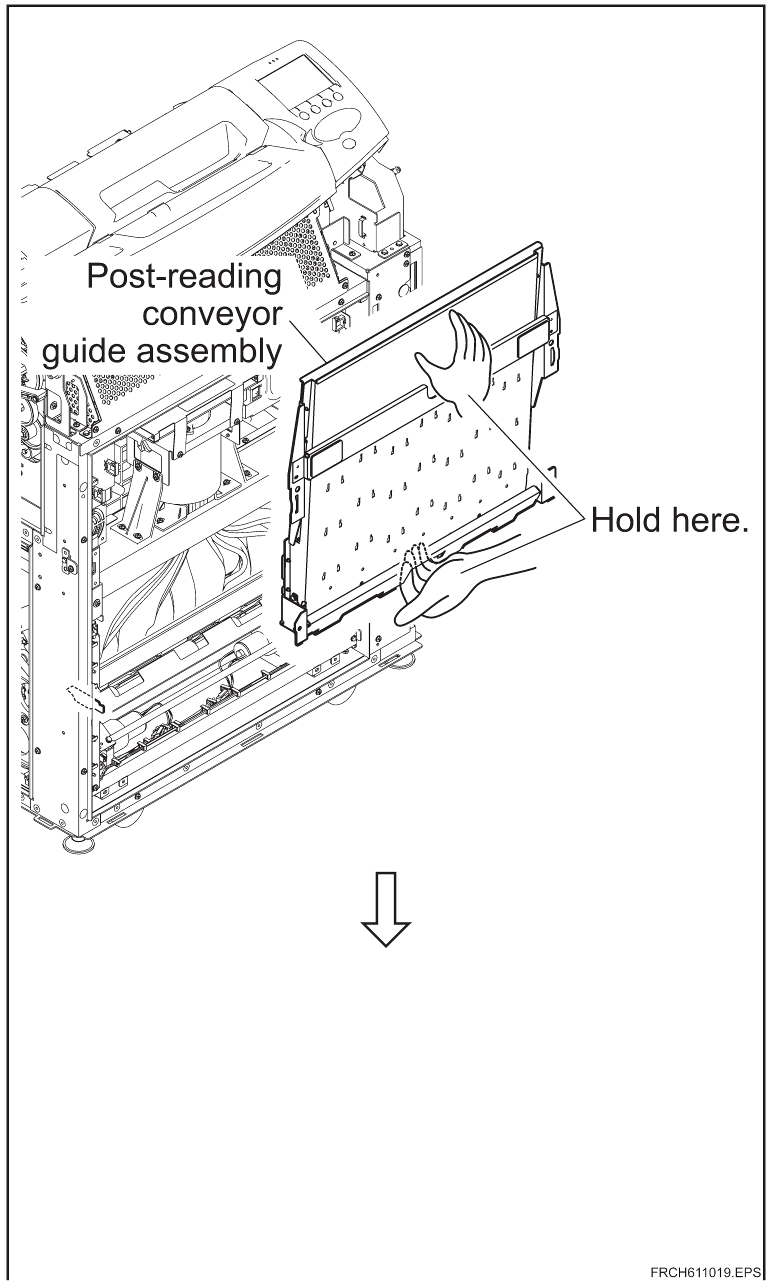

[Fasten]
Screw
(BR3x6)
Bracket
FRCH611036.EPS

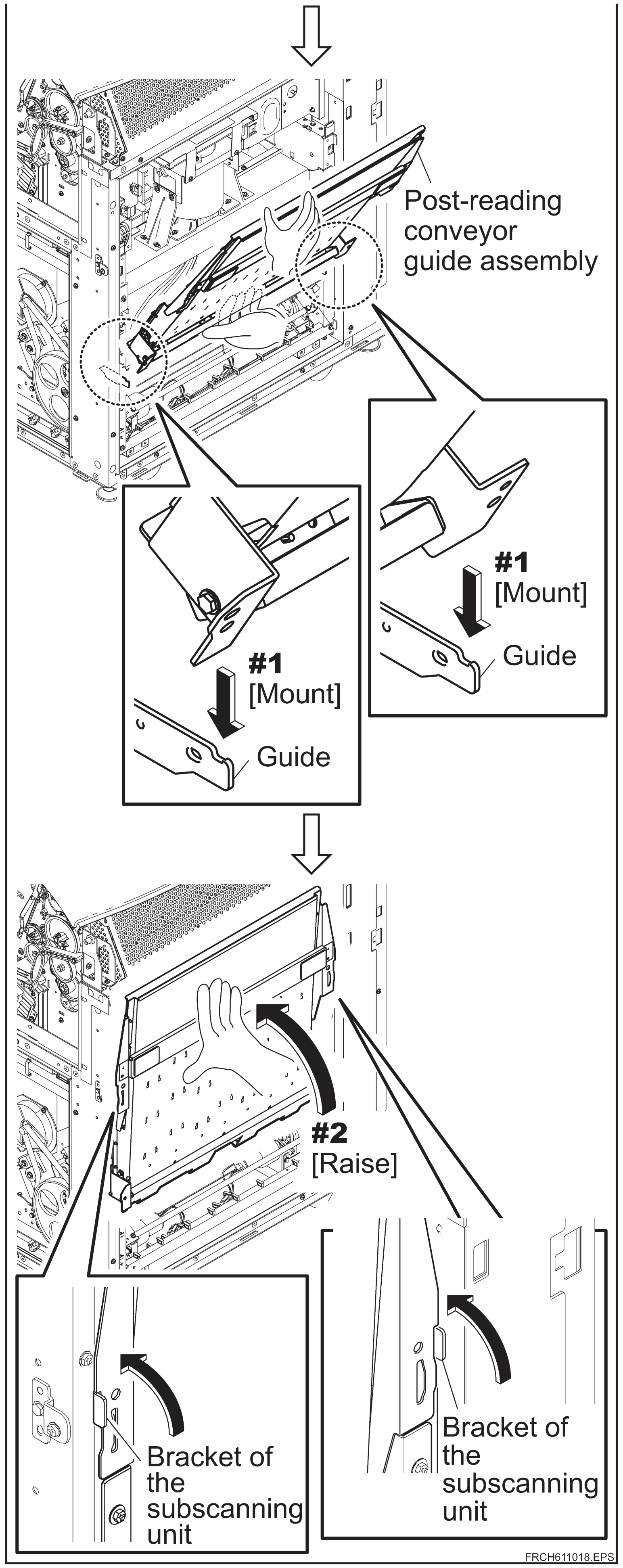
11.3 Reinstalling the Post-Reading Conveyor Guide Assembly

1. **Hold the post-reading conveyor guide assembly as indicated in the figure, and mount it on the guide of the subscanning unit. Raise the post-reading conveyor guide assembly until it hooks on the bracket of the subscanning unit.**

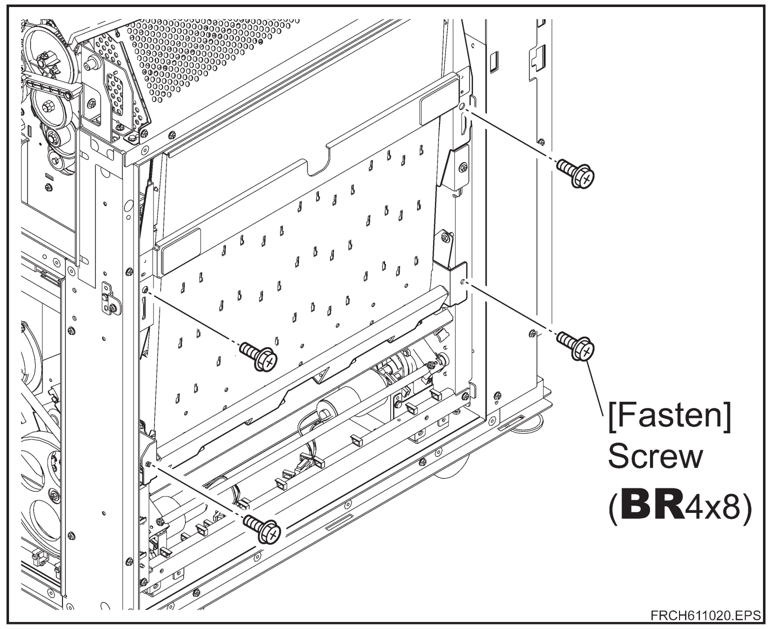
◆ ***NOTES*** ◆

- *Do not strongly grasp the upper part of the post-reading conveyor guide assembly. The guide might deform, causing an IP jam.*
- *Mount the post-reading conveyor guide assembly on the guide of the subscanning unit, before raising the post-reading conveyor guide assembly.*


Post-reading conveyor guide assembly
Hold here.
⇩
FRCH611019.EPS

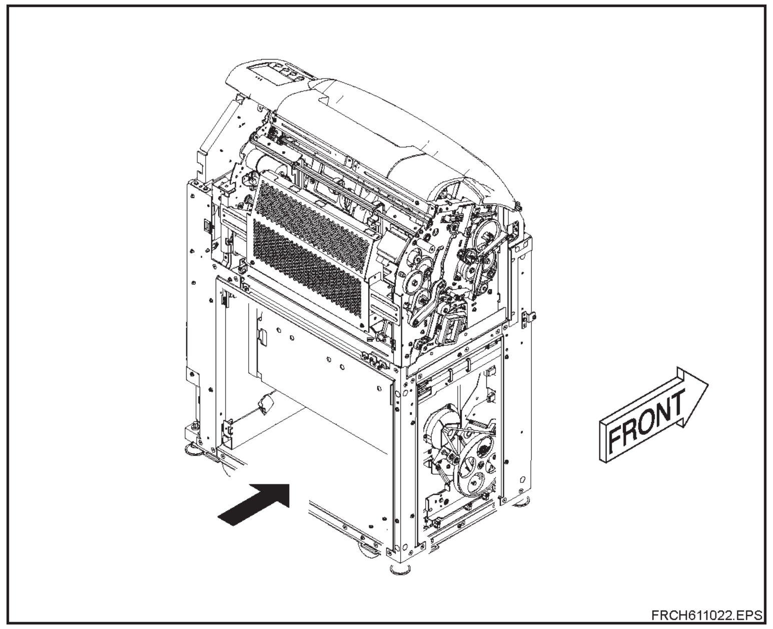

⇩
Post-reading conveyor guide assembly
#1 [Mount]
Guide
#1 [Mount]
Guide
⇩
#2 [Raise]
Bracket of the subscanning unit
Bracket of the subscanning unit
FRCH611018.EPS

2. **Reinstall the retaining screws of the post-reading conveyor guide assembly.**


[Fasten]
Screw
(BR4x8)
FRCH611020.EPS

11.4 Reinstalling the Side-Positioning Conveyor Unit

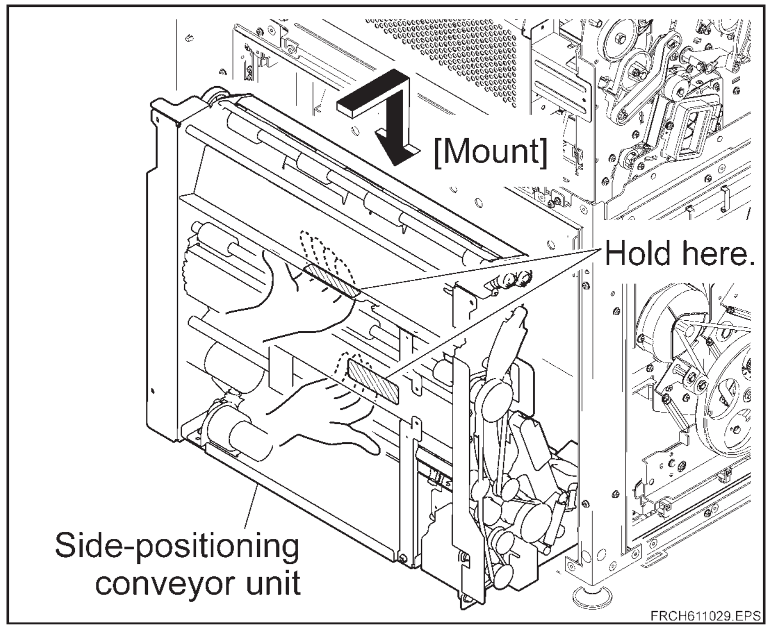
1. **Take the procedures from 2 to 3 from the direction indicated by the arrow in the figure.**


FRONT
FRCH611022.EPS

2. **Hold the side-positioning conveyor unit as indicated in the figure, and mount it on the housing.**

   ◆ NOTE ◆

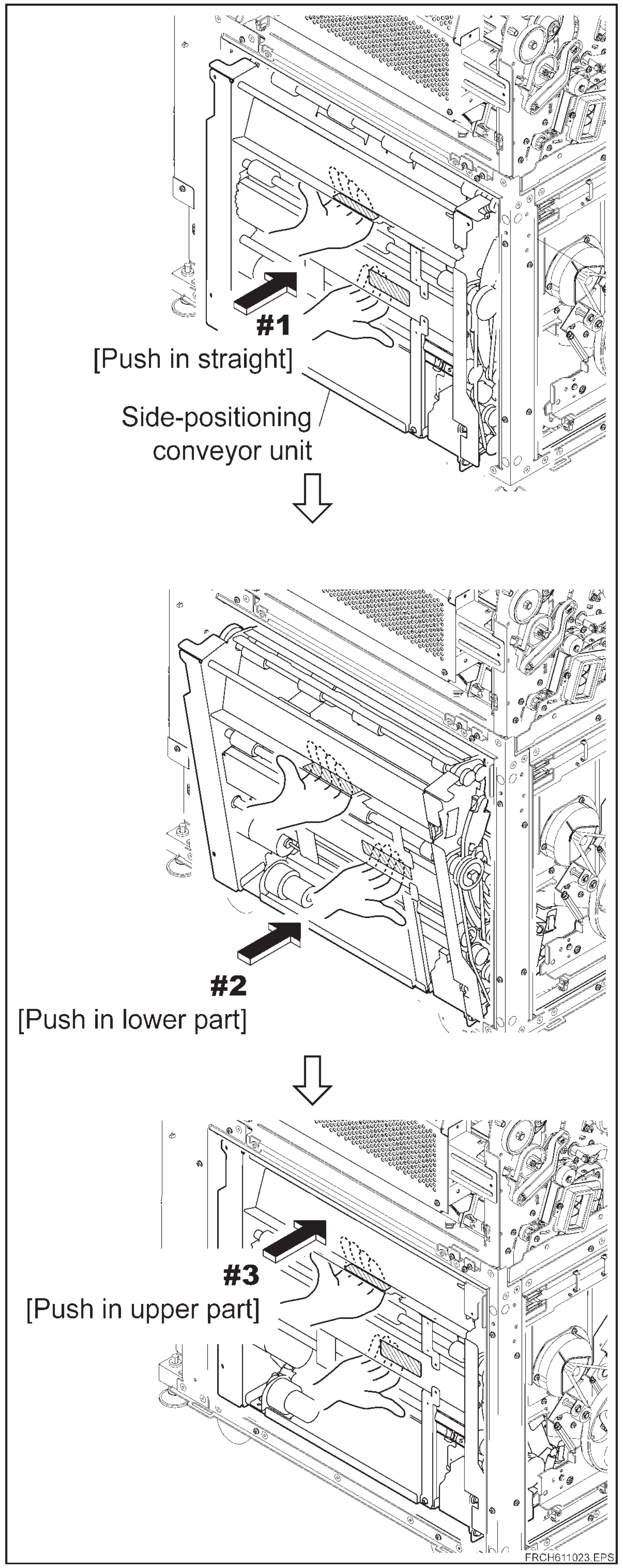
   Always support the unit on the positions indicated in the figure for this operation. If the unit is pulled out with other positions supported, components of the side-positioning conveyor unit might get damaged.


[Mount]
Hold here.
Side-positioning conveyor unit
FRCH611029.EPS

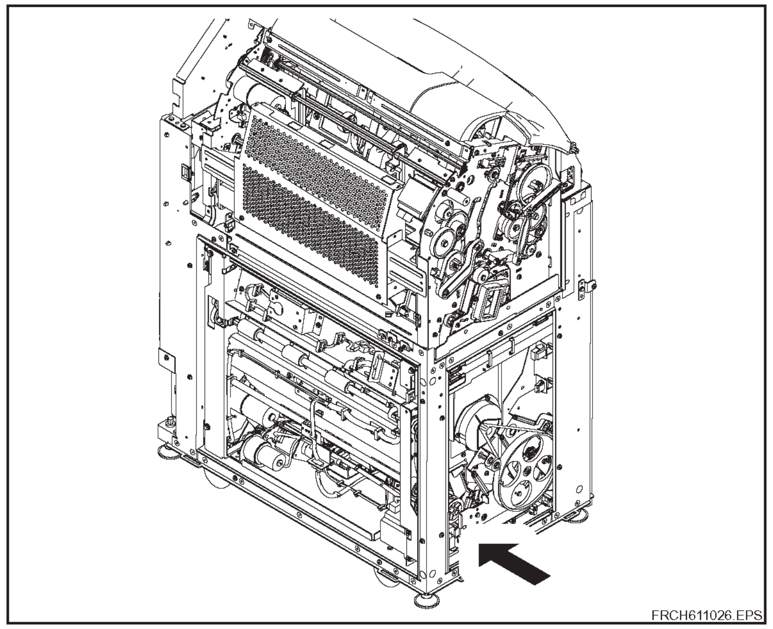
3. **Push in the side-positioning conveyor unit straight halfway into the housing. Push in the lower part of the side-positioning conveyor unit horizontally into the housing, and then push in the upper part.**

   ◆ NOTE ◆

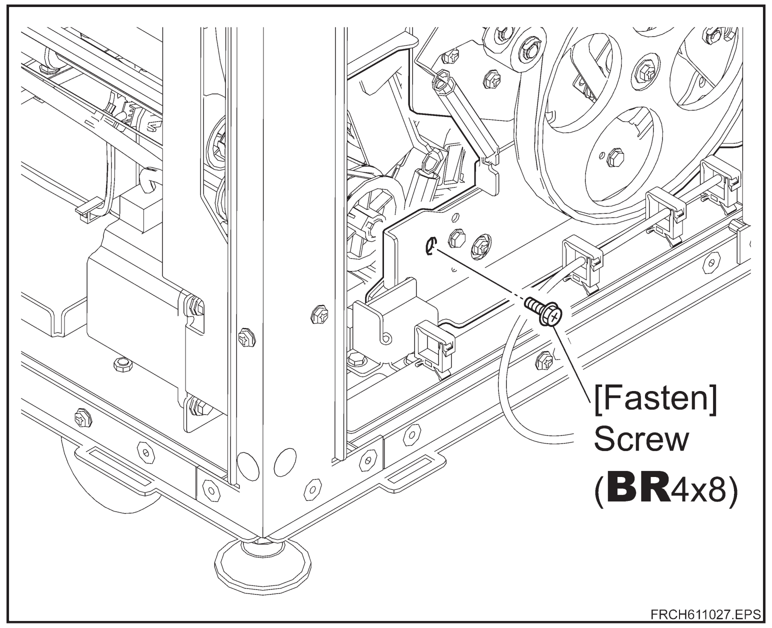
   Always support the unit on the positions indicated in the figure for this operation. If the unit is pulled out with other positions supported, components of the side-positioning conveyor unit might get damaged.


#1
[Push in straight]
Side-positioning conveyor unit
#2
[Push in lower part]
#3
[Push in upper part]
FRCH611023.EPS

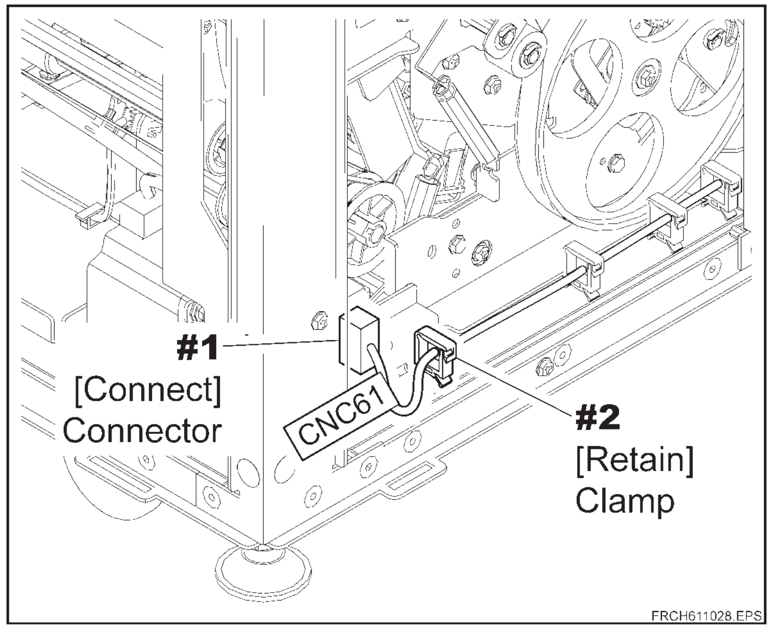
4. **Take the procedures 5 and 6 from the direction indicated by the arrow in the figure.**


FRCH611026.EPS

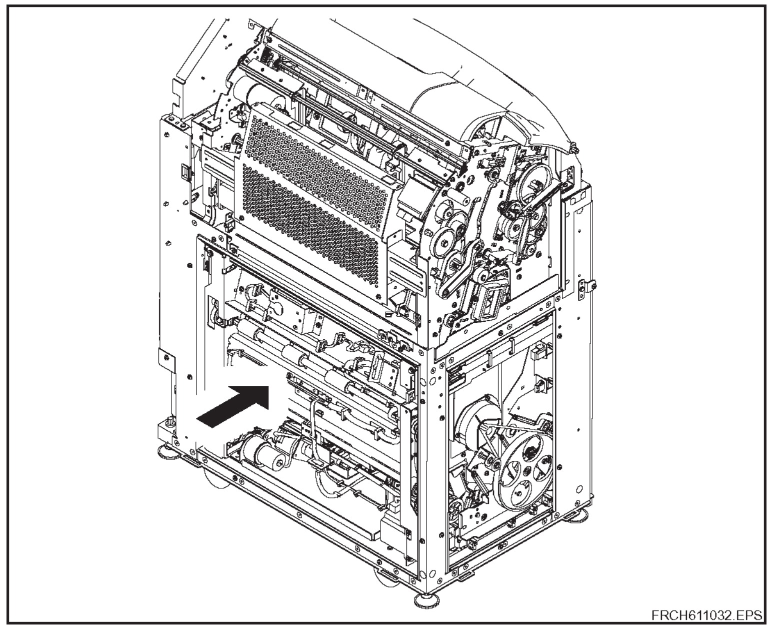
5. **Reinstall the retaining screw of the side-positioning conveyor unit.**


[Fasten]
Screw
(**BR**4x8)
FRCH611027.EPS

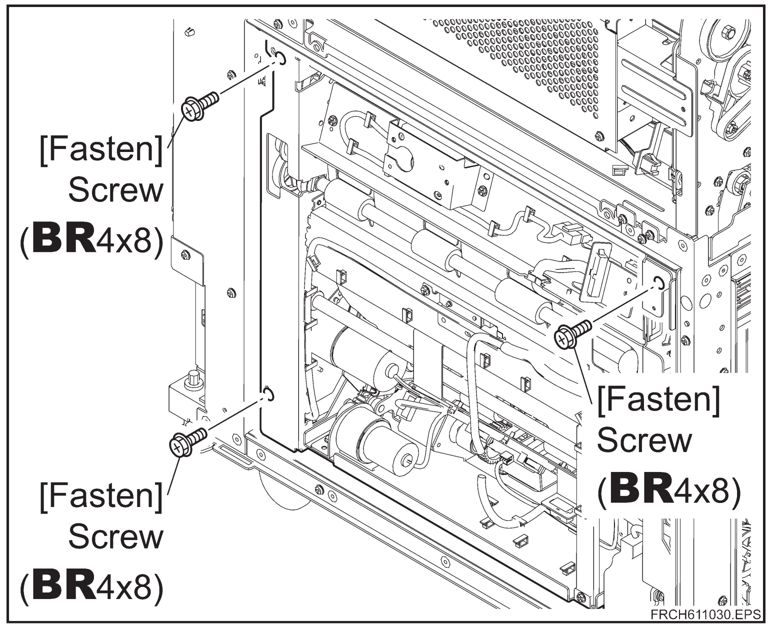
6. **Connect the connector, and retain the cable with the clamp.**


#1
[Connect]
Connector
CNC61
#2
[Retain]
Clamp
FRCH611028.EPS

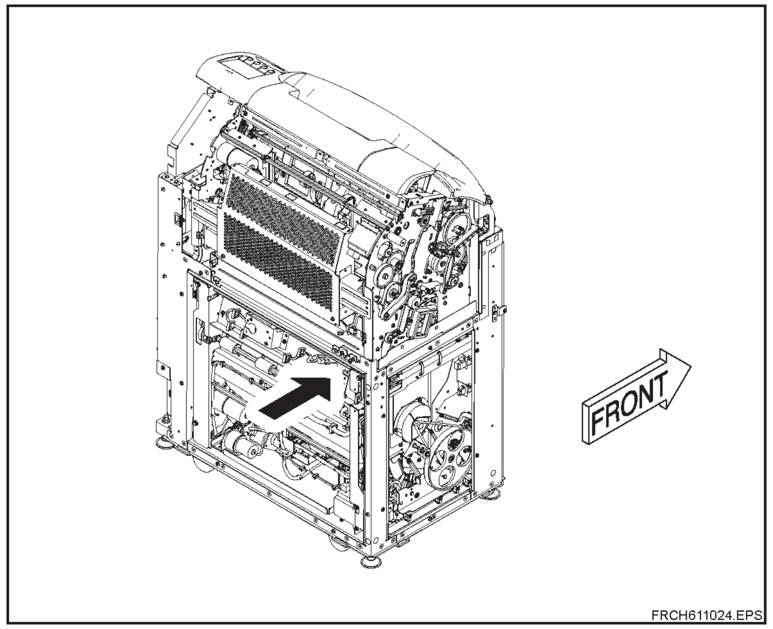
7. **Take the procedure 8 from the direction indicated by the arrow in the figure.**


FRCH611032.EPS

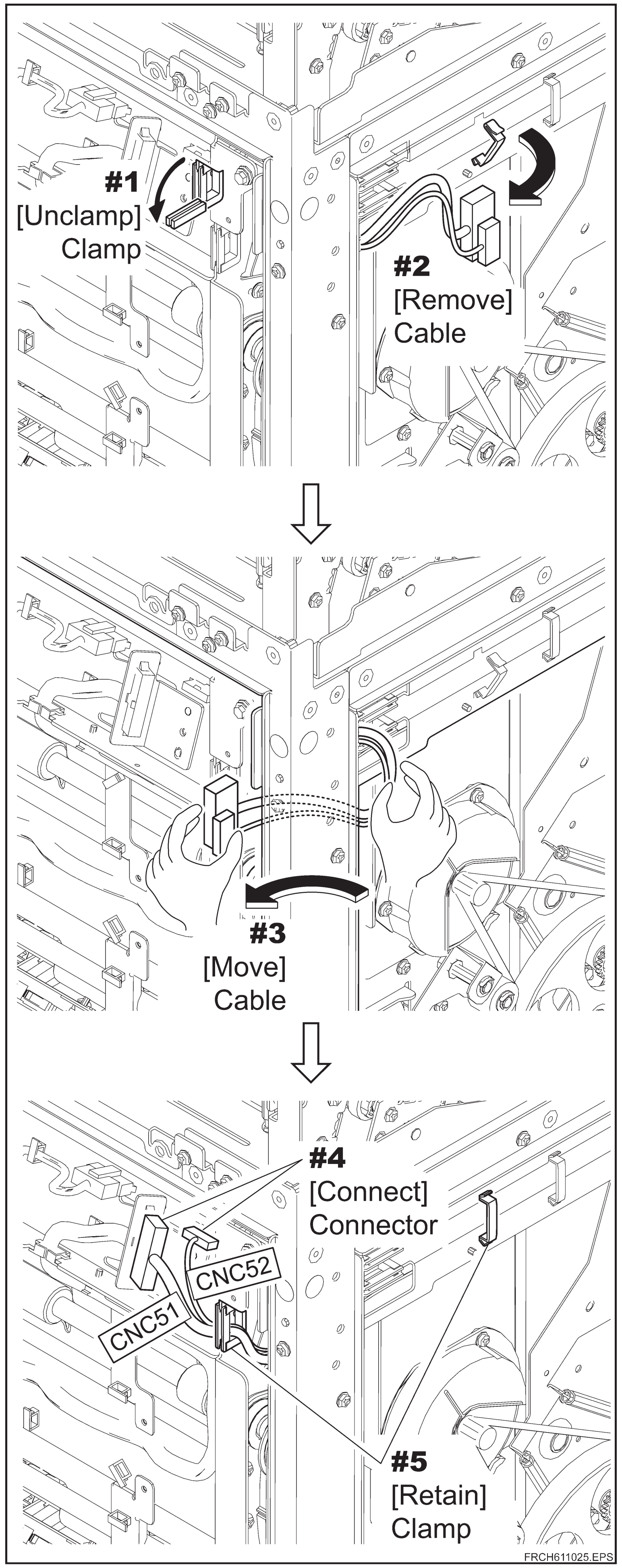
8. **Reinstall the retaining screws of the side-positioning conveyor unit.**


[Fasten]
Screw
(**BR**4x8)
[Fasten]
Screw
(**BR**4x8)
[Fasten]
Screw
(**BR**4x8)
FRCH611030.EPS

9. **Take the procedure 10 from the direction indicated by the arrow in the figure.**

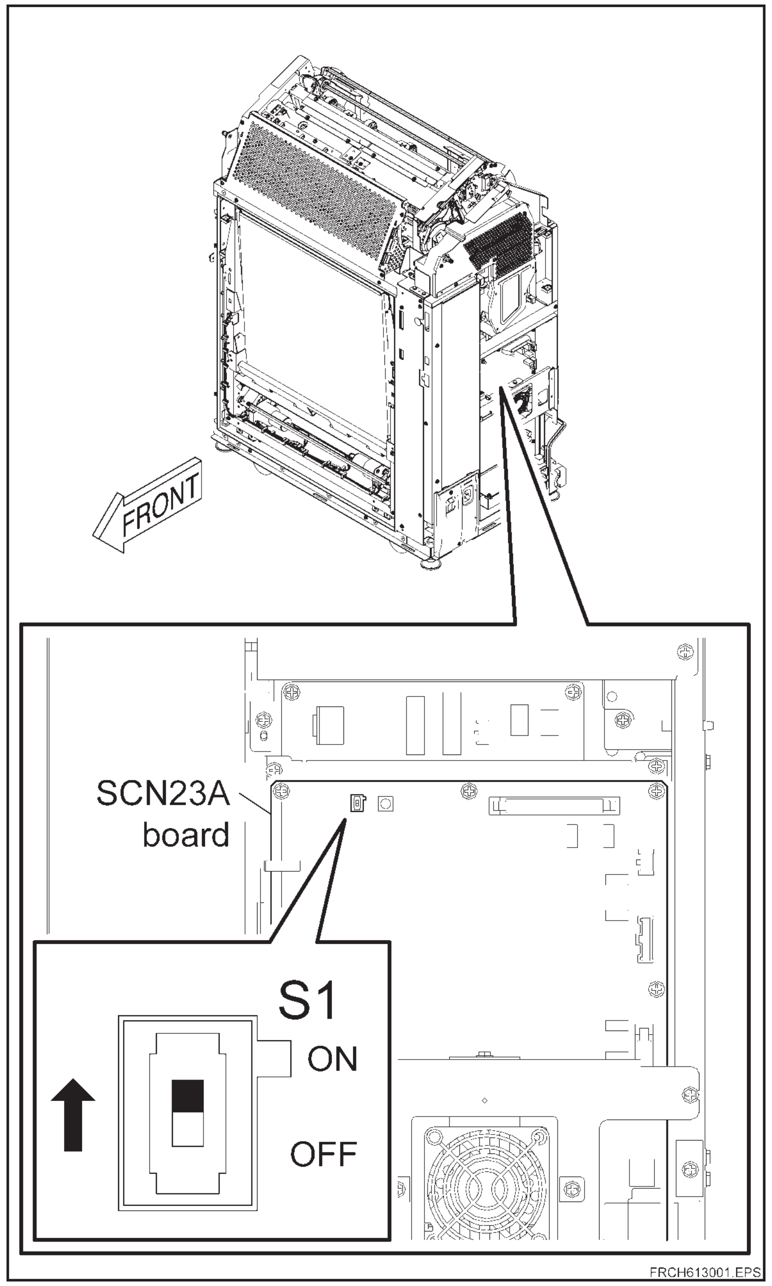

FRONT
FRCH611024.EPS

10. **Disconnect the cable from the clamp, and move it toward the rear of the housing. Connect the connector, and retain the cable with the clamps.**


#1
[Unclamp]
Clamp
#2
[Remove]
Cable
#3
[Move]
Cable
#4
[Connect]
Connector
CNC52
CNC51
#5
[Retain]
Clamp
FRCH611025.EPS

12. Turning ON the High-Voltage Switch

1. **Turn ON the high-voltage switch (S1) on the SCN23A board.**

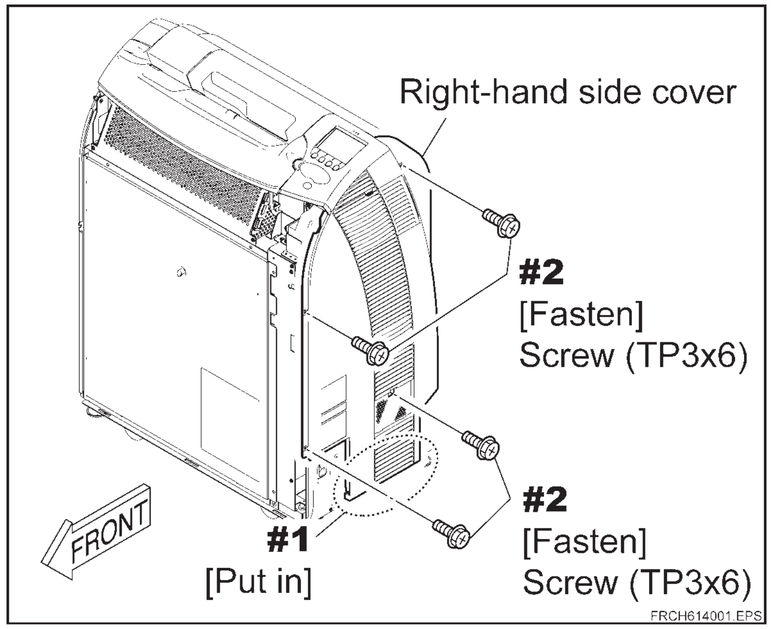

FRONT
SCN23A board
S1
ON
OFF
FRCH613001.EPS

13. Cleaning/Reinstalling the Covers and Louvers

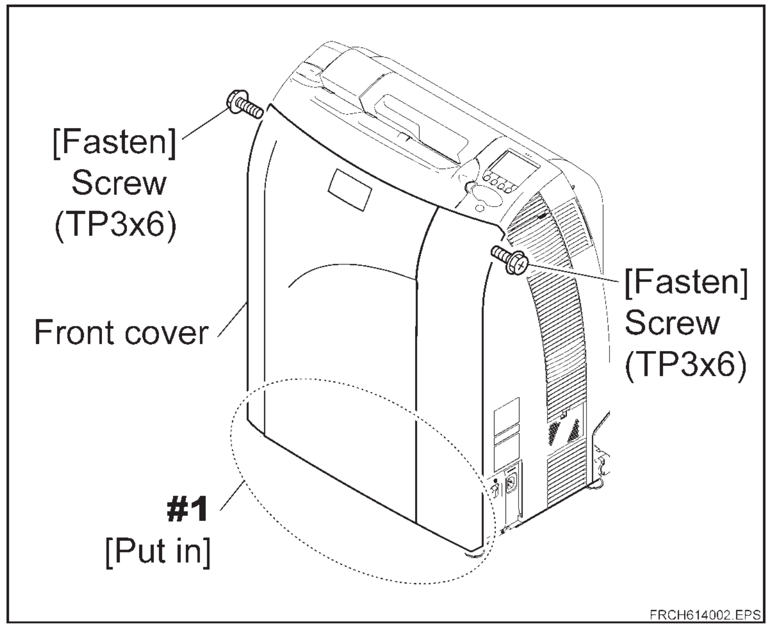
13.1 Cleaning/Reinstalling the Covers and Louvers (1st/5th Year)

1. **Clean the covers and louvers.**

2. **Put the lower part of the right-hand side cover into the housing to install. Retain it with the screws while holding the cover.**


Right-hand side cover
#2
[Fasten]
Screw (TP3x6)
#2
[Fasten]
Screw (TP3x6)
#1
[Put in]
FRONT
FRCH614001.EPS

3. **Put the lower part of the front cover into the housing to install. Retain it with the screws while holding the cover.**


[Fasten]
Screw
(TP3x6)
Front cover
[Fasten]
Screw
(TP3x6)
#1
[Put in]
FRCH614002.EPS

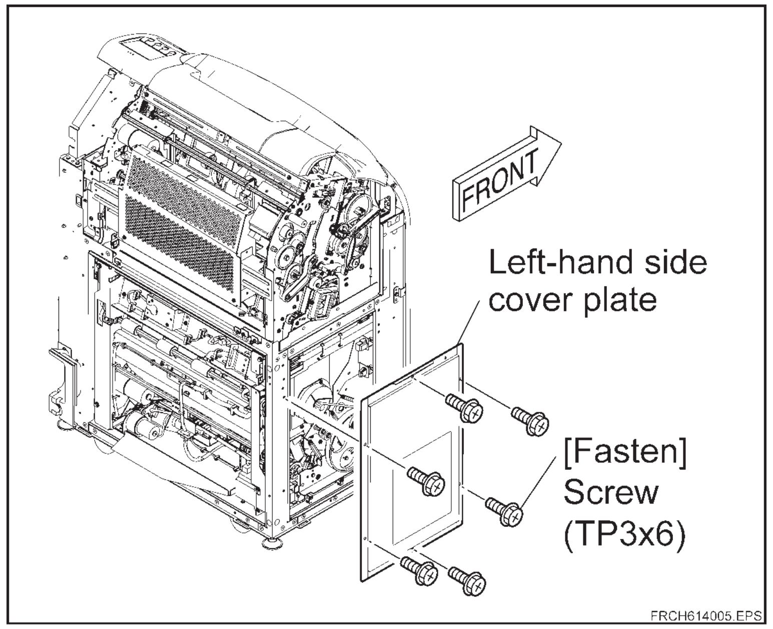
13.2 Cleaning/Reinstalling the Covers and Louvers (2nd/4th/6th Year)

⚠ CAUTION

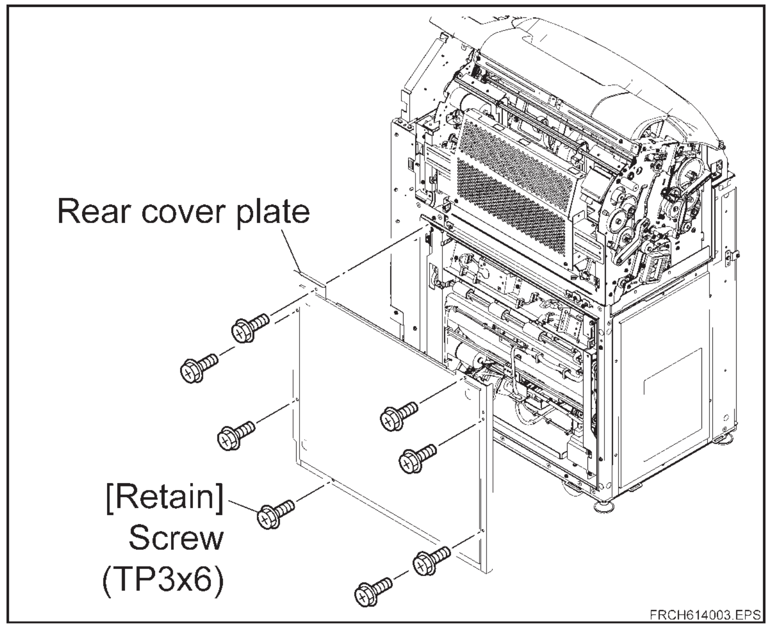
Check to make sure that the high-voltage switch is ON before reinstalling the cover.

1. **Clean the covers and louvers.**

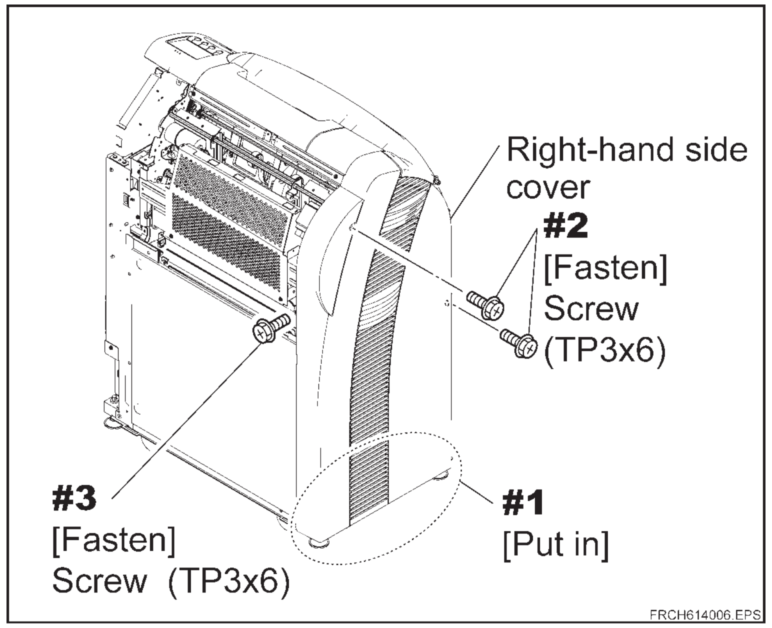
2. **Reinstall the left-hand side cover plate.**


FRONT
Left-hand side cover plate
[Fasten] Screw (TP3x6)
FRCH614005.EPS

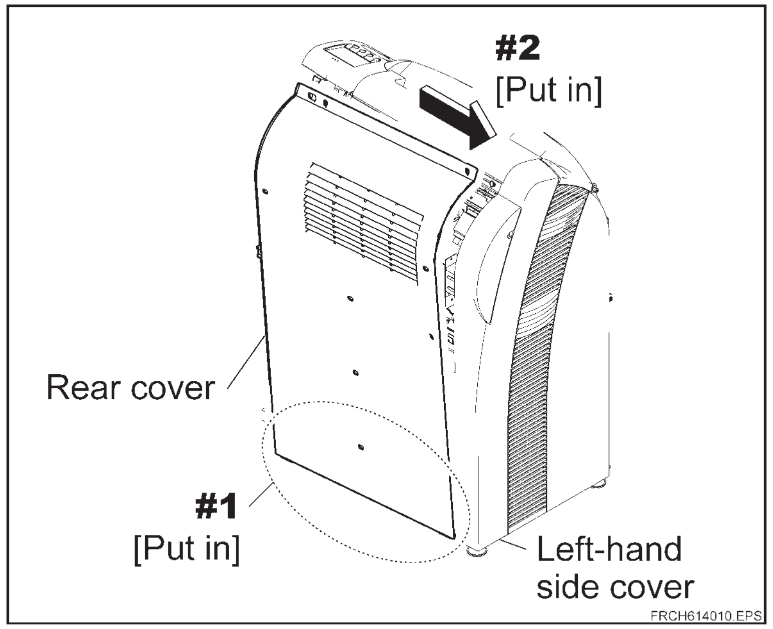
3. **Reinstall the rear cover plate.**


Rear cover plate
[Retain] Screw (TP3x6)
FRCH614003.EPS

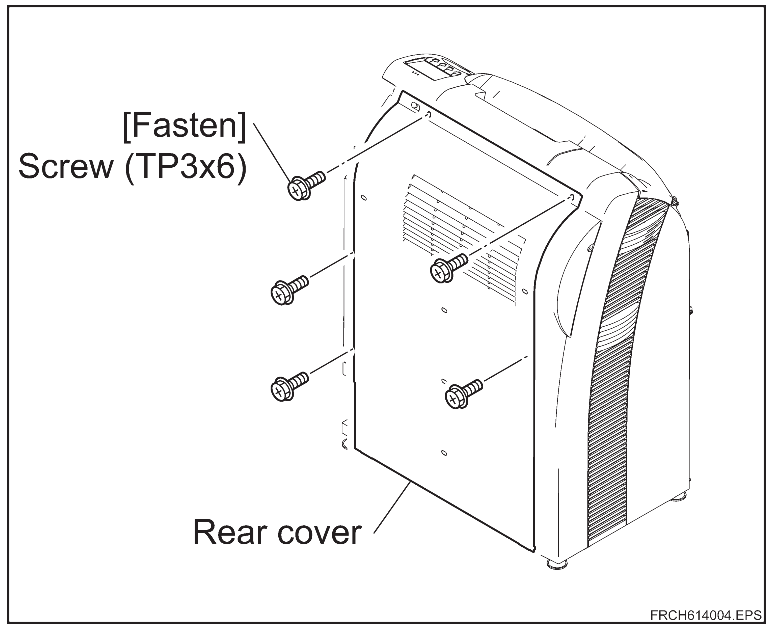
4. **Put the lower part of the left-hand side cover into the housing to install. Retain it with the screws while holding the cover.**


Right-hand side cover
#2
[Fasten] Screw (TP3x6)
#3
[Fasten] Screw (TP3x6)
#1
[Put in]
FRCH614006.EPS

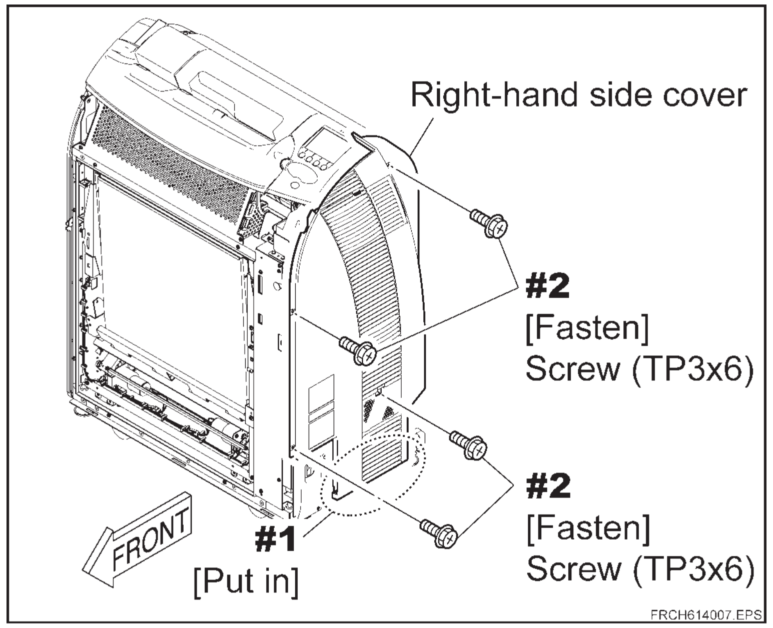
5. **Put the lower part of the rear cover into the housing to install. Put in the right-hand side below the left-hand side cover, and reinstall the rear cover.**


#2
[Put in]
Rear cover
#1
[Put in]
Left-hand side cover
FRCH614010.EPS

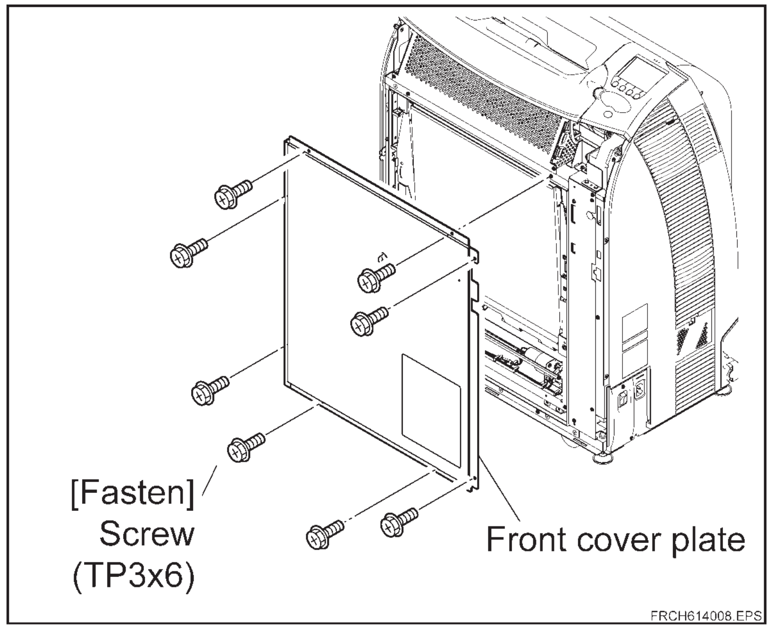
6. **Retain the rear cover with the screws while holding it.**


[Fasten]
Screw (TP3x6)
Rear cover
FRCH614004.EPS

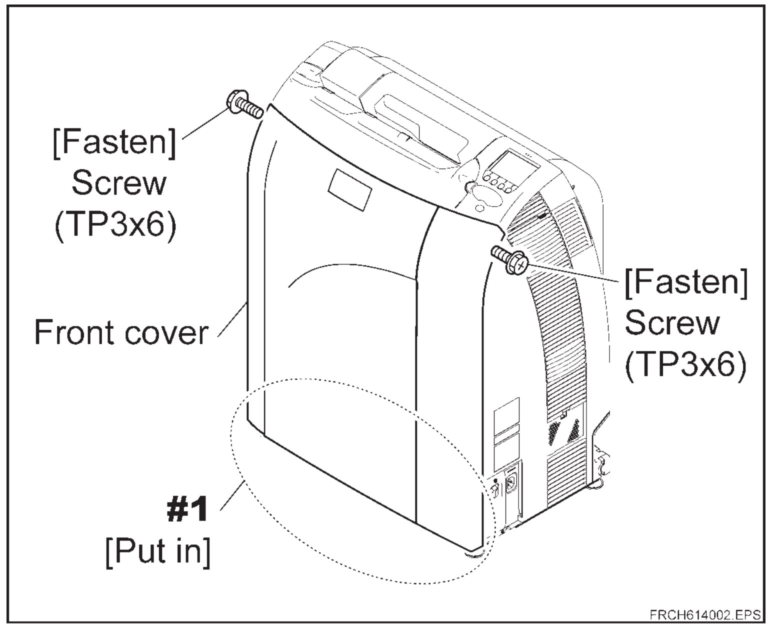
7. **Put the lower part of the right-hand side cover into the housing to install. Retain it with the screws while holding the cover.**


Right-hand side cover
#2
[Fasten]
Screw (TP3x6)
#2
[Fasten]
Screw (TP3x6)
#1
[Put in]
FRONT
FRCH614007.EPS

8. **Reinstall the front cover plate.**


[Fasten]
Screw
(TP3x6)
Front cover plate
FRCH614008.EPS

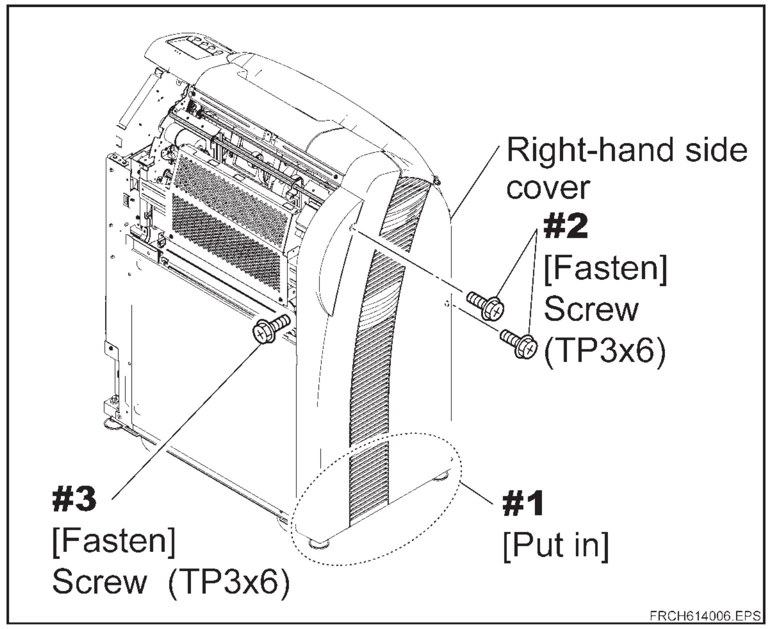
9. **Put the lower part of the front cover into the housing to install. Retain it with the screws while holding the cover.**


[Fasten]
Screw
(TP3x6)
Front cover
#1
[Put in]
[Fasten]
Screw
(TP3x6)
FRCH614002.EPS

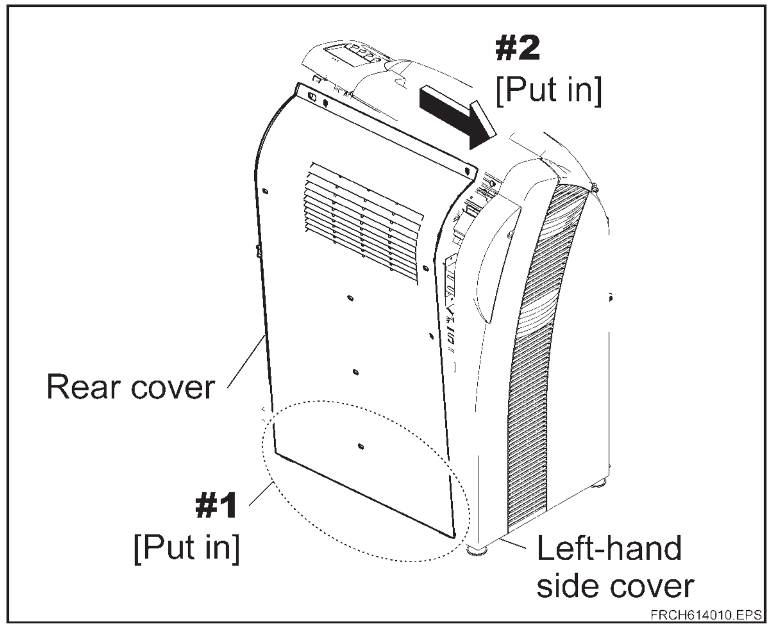
13.3 Cleaning/Reinstalling the Covers and Louvers (3rd Year)

1. **Clean the covers and louvers.**

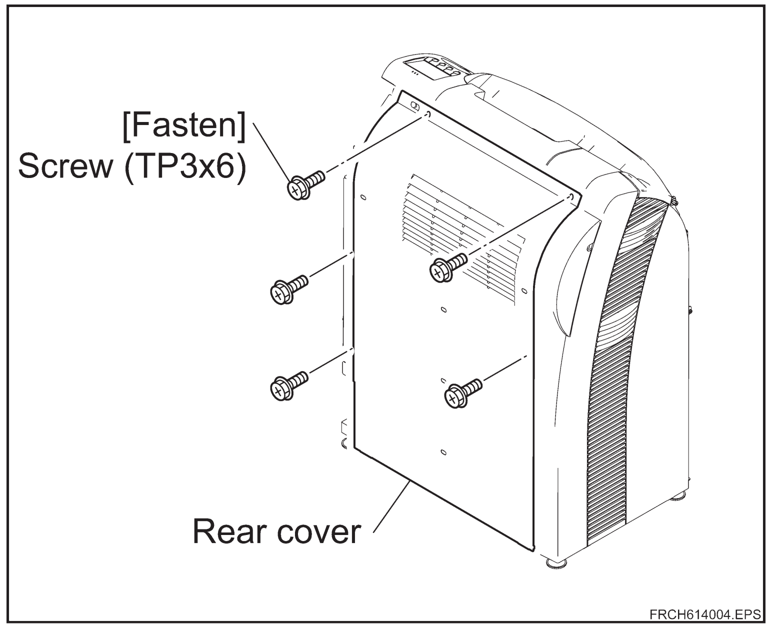
2. **Put the lower part of the left-hand side cover into the housing to install. Retain it with the screws while holding the cover.**


Right-hand side cover
#2
[Fasten]
Screw
(TP3x6)
#3
[Fasten]
Screw (TP3x6)
#1
[Put in]
FRCH614006.EPS

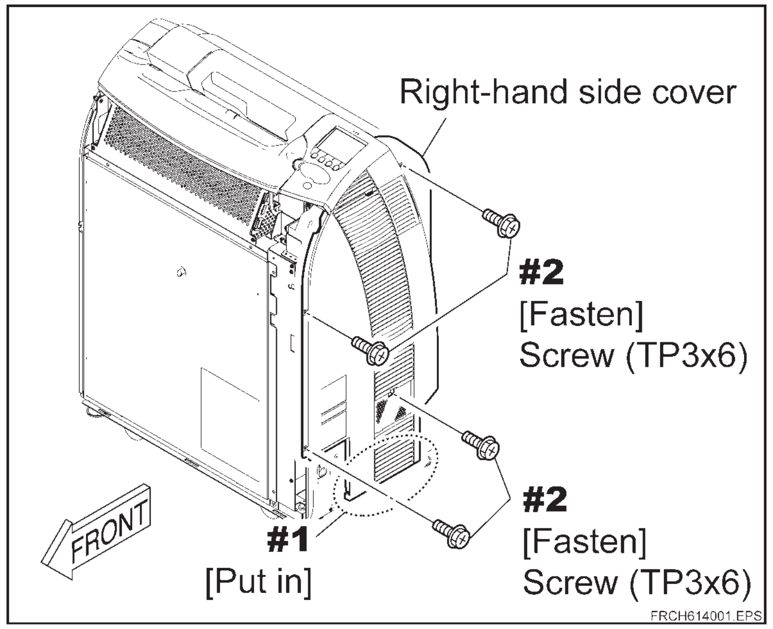
3. **Put the lower part of the rear cover into the housing to install. Put in the right-hand side below the left-hand side cover, and reinstall the rear cover.**


#2
[Put in]
Rear cover
#1
[Put in]
Left-hand side cover
FRCH614010.EPS

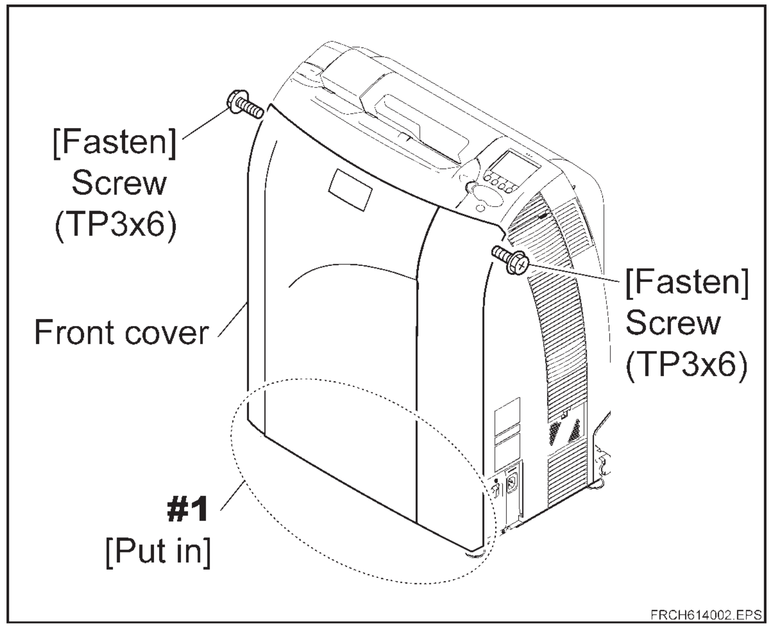
4. **Retain the rear cover with the screws while holding it.**


[Fasten]
Screw (TP3x6)
Rear cover
FRCH614004.EPS

5. **Put the lower part of the right-hand side cover into the housing to install. Retain it with the screws while holding the cover.**

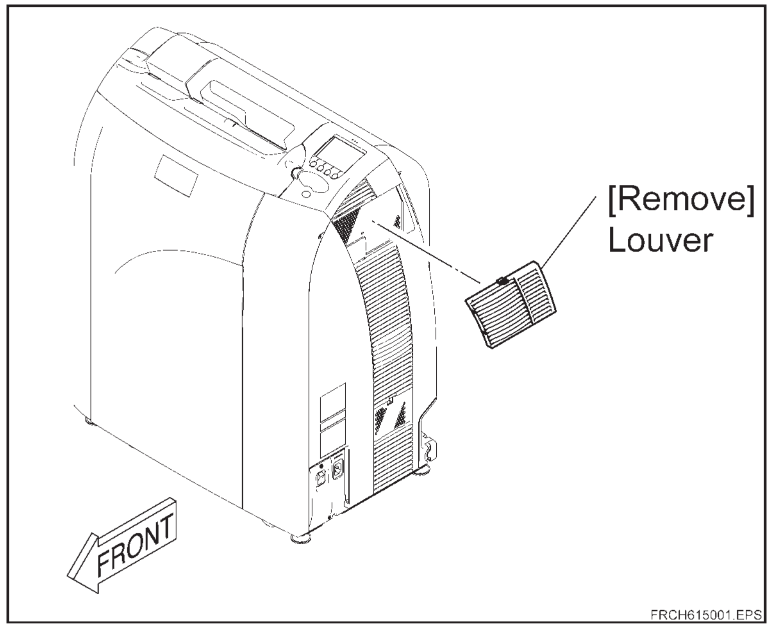

Right-hand side cover
#2
[Fasten]
Screw (TP3x6)
#2
[Fasten]
Screw (TP3x6)
#1
[Put in]
FRONT
FRCH614001.EPS

6. **Put the lower part of the front cover into the housing to install. Retain it with the screws while holding the cover.**


[Fasten]
Screw
(TP3x6)
[Fasten]
Screw
(TP3x6)
Front cover
#1
[Put in]
FRCH614002.EPS

14. Cleaning/Replacing the Air Filter

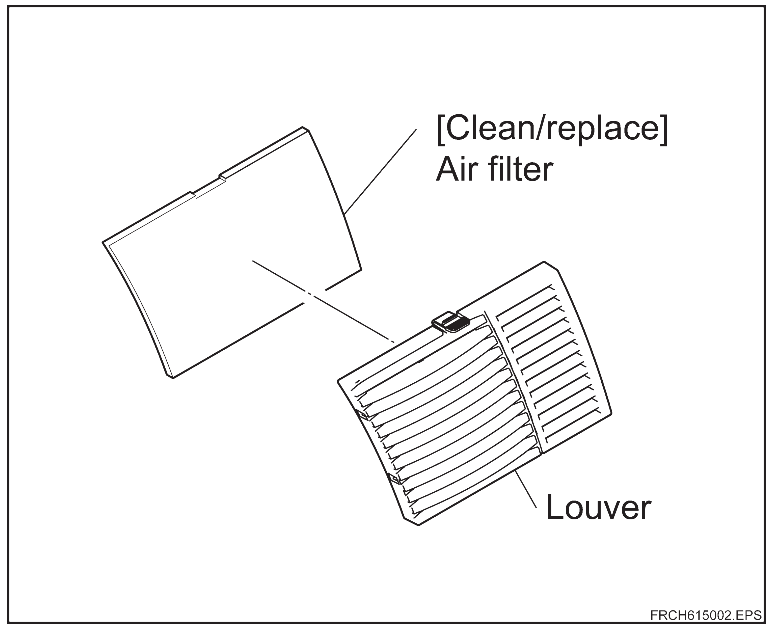
1. **Remove the louver.**


[Remove]
Louver
FRONT
FRCH615001.EPS

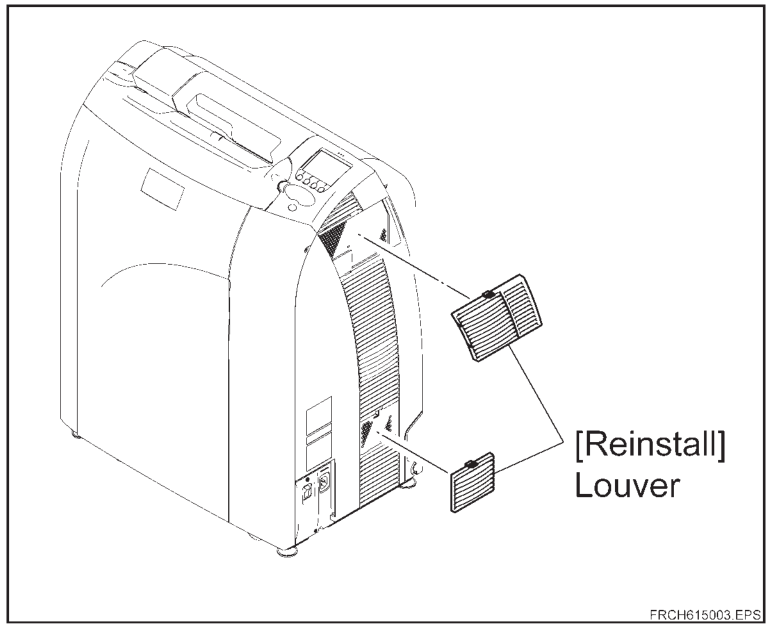
2. **When the machine has been used for one year, three years, or five years, clean the air filter. When the machine has been used for two years, four years, or six years, replace the air filter.**

◇ REFERENCE ◇

The air filter should be cleaned every three months by the user.


[Clean/replace]
Air filter
Louver
FRCH615002.EPS

3. **Reinstall the louver.**


[Reinstall]
Louver
FRCH615003.EPS

15. Securing the Machine

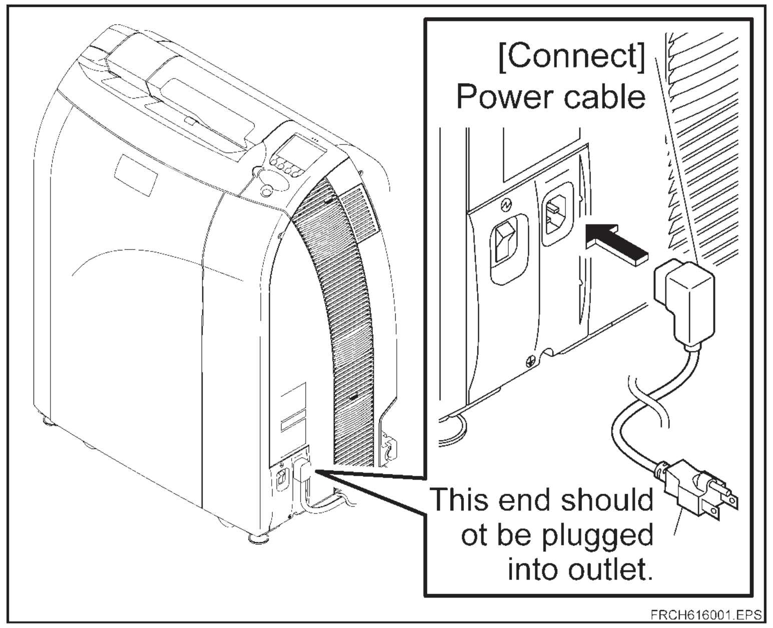
15.1 Connecting the Cables

⚠ WARNINGS

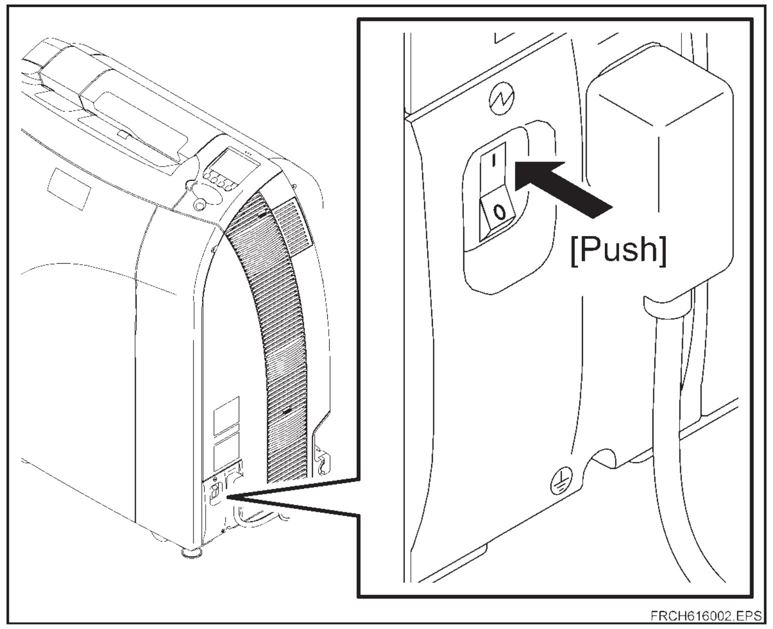
- *Before measuring the resistance value, make sure that the power plug is unplugged from the outlet.*
- *If the machine is to be installed in the patient environment, see "Appendix 1_ADDITIONAL PROTECTIVE GROUNDING"*

  ☞ *{IN: Appendix 1_ADDITIONAL PROTECTIVE GROUNDING}*

1. **Connect the power cable to the machine.**


[Connect]
Power cable
This end should
ot be plugged
into outlet.
FRCH616001.EPS

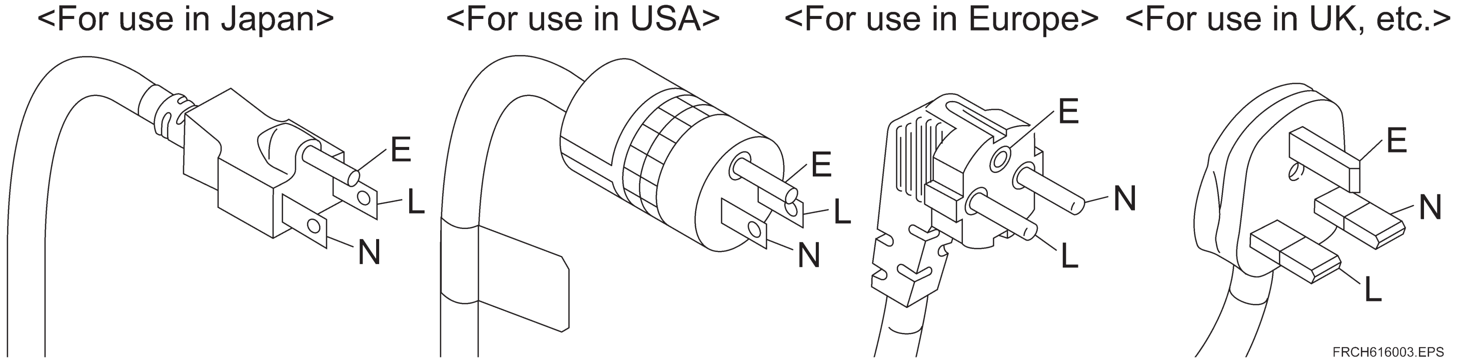
2. **Place the breaker switch in the ON position.**


[Push]
FRCH616002.EPS

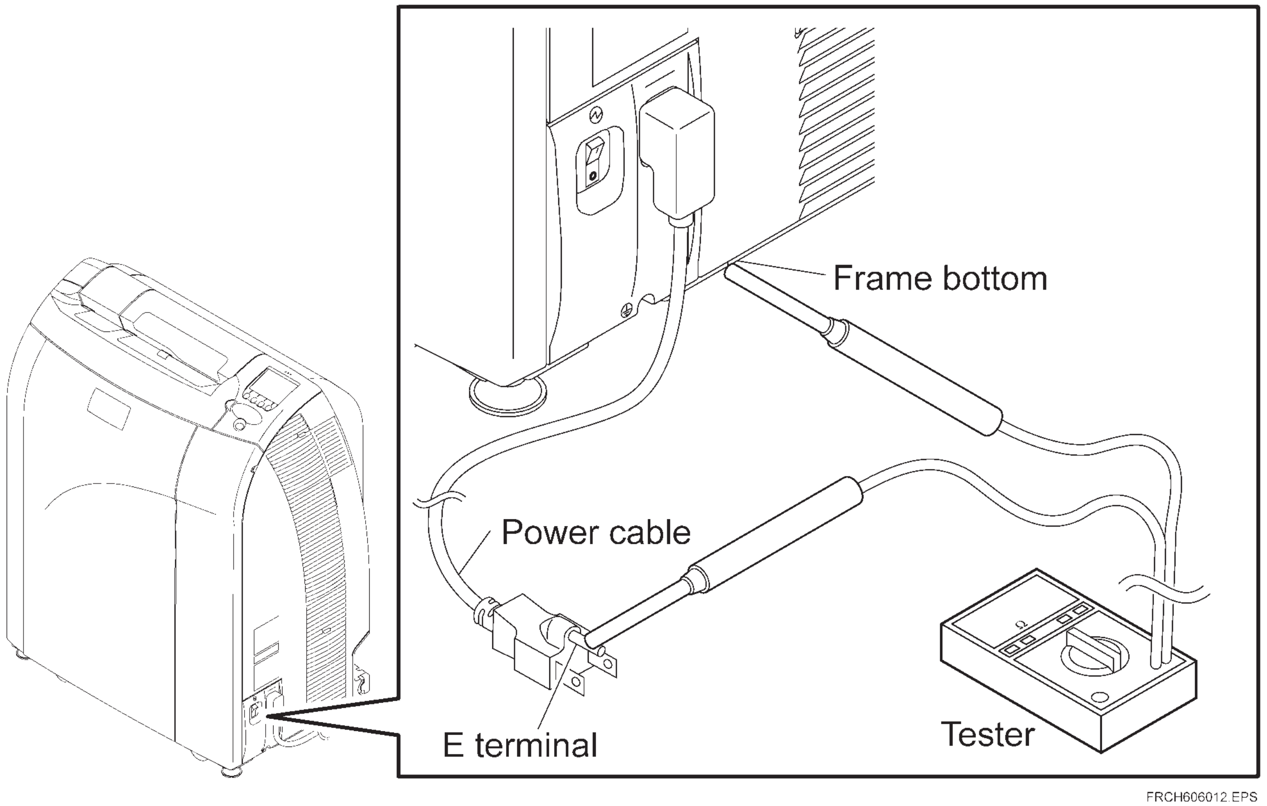
3. **Measure the resistance value of the power cable.**

(Reference value)

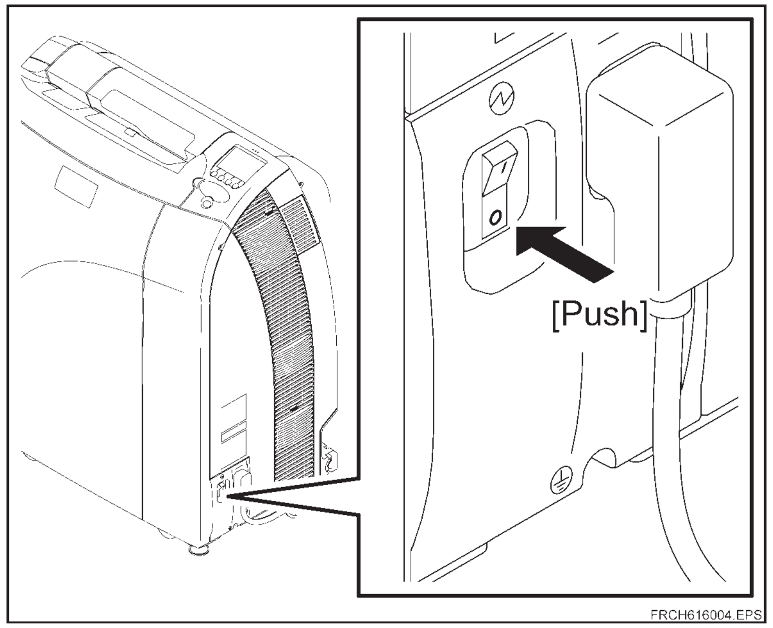
Terminal	L - N	L - E	N - E
Resistance value	100kΩ -	∞	∞


<For use in Japan>
<For use in USA>
<For use in Europe>
<For use in UK, etc.>
E
L
N
E
L
N
E
N
L
E
N
L
FRCH616003.EPS

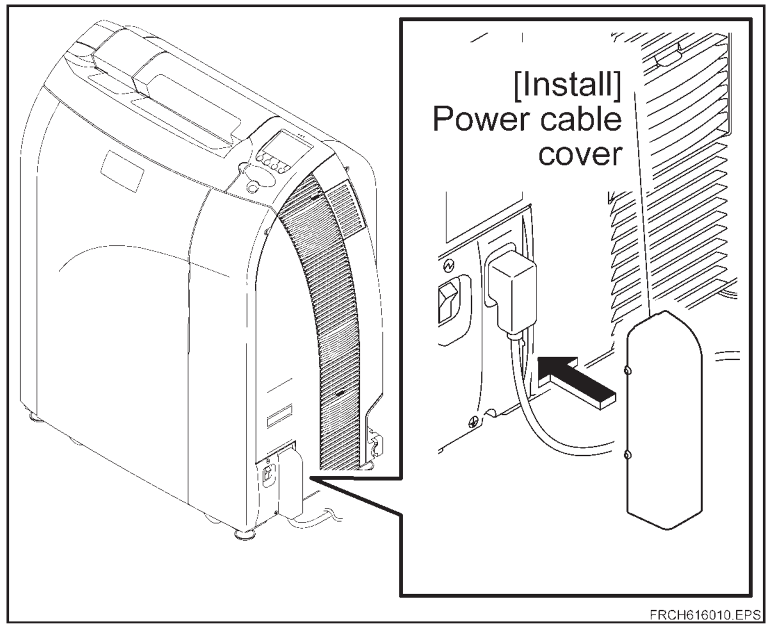
4. **Measure the resistance value between the E terminal of the power cable and the bottom of the machine frame, and make sure that there is continuity.**


Frame bottom
Power cable
E terminal
Tester
FRCH606012.EPS

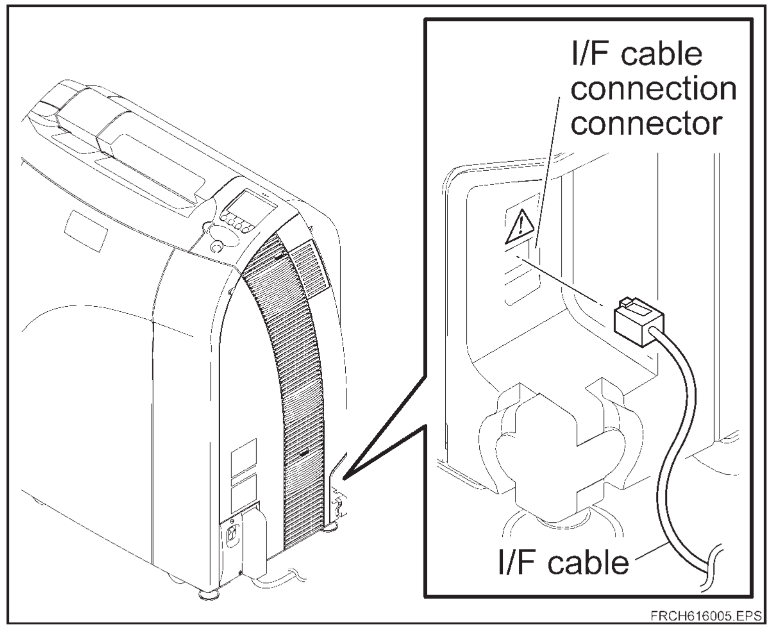
5. **Place the breaker switch in the OFF position.**


[Push]
FRCH616004.EPS

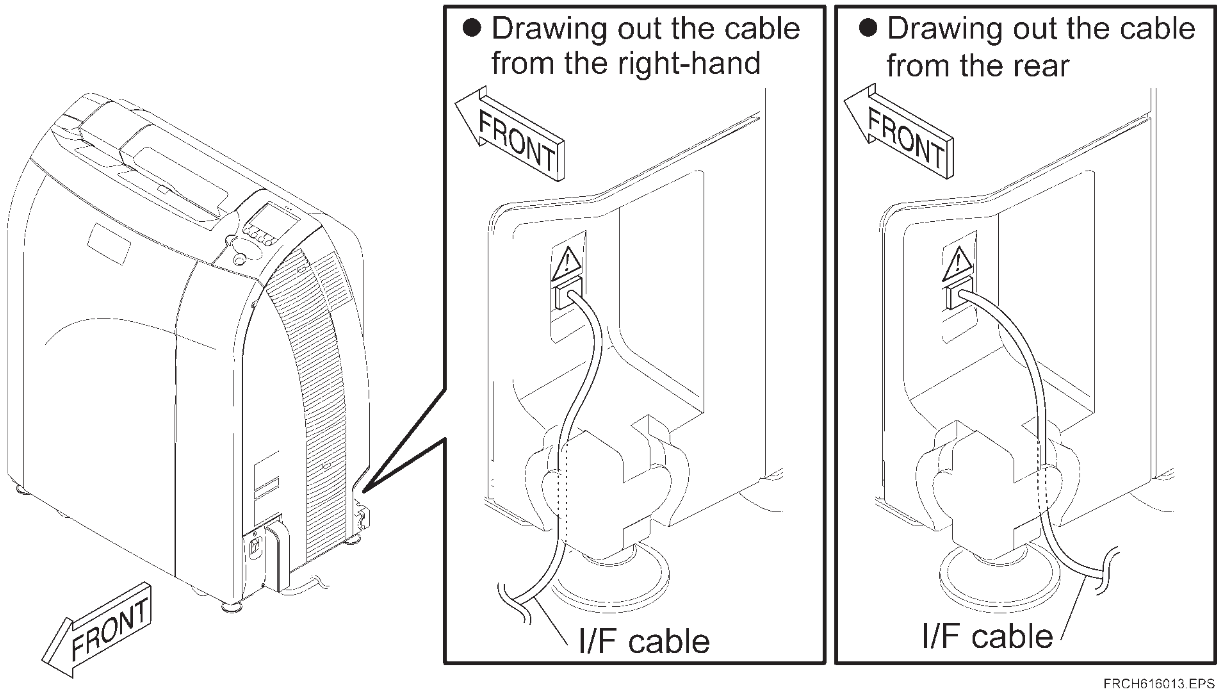
6. **Install the the power cable cover.**


[Install]
Power cable cover
FRCH616010.EPS

7. **Connect the I/F cable to the I/F cable connection connector.**


I/F cable connection connector
I/F cable
FRCH616005.EPS

8. **Check the installation conditions of the machine, cable wiring locations and so on. When the I/F cable is to be drawn out from the right-hand side of the machine, pass the cable through the right-hand slot, and when it is to be drawn out from the rear of the machine, pass it through the rear slot.**

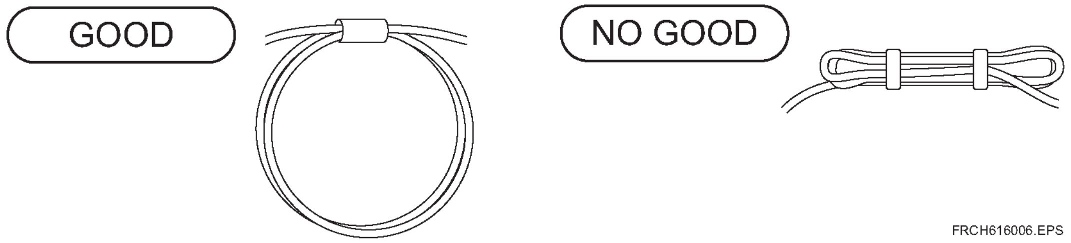

● Drawing out the cable from the right-hand
● Drawing out the cable from the rear
FRONT
FRONT
FRONT
I/F cable
I/F cable
FRCH616013.EPS

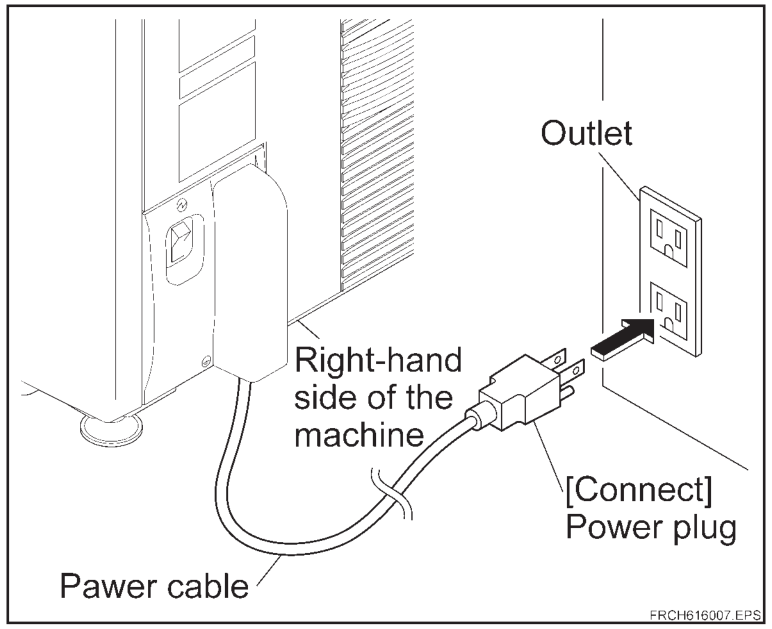
9. **Move the machine to the installation space.**

10. **Connect the power cable to the outlet.**

CAUTION

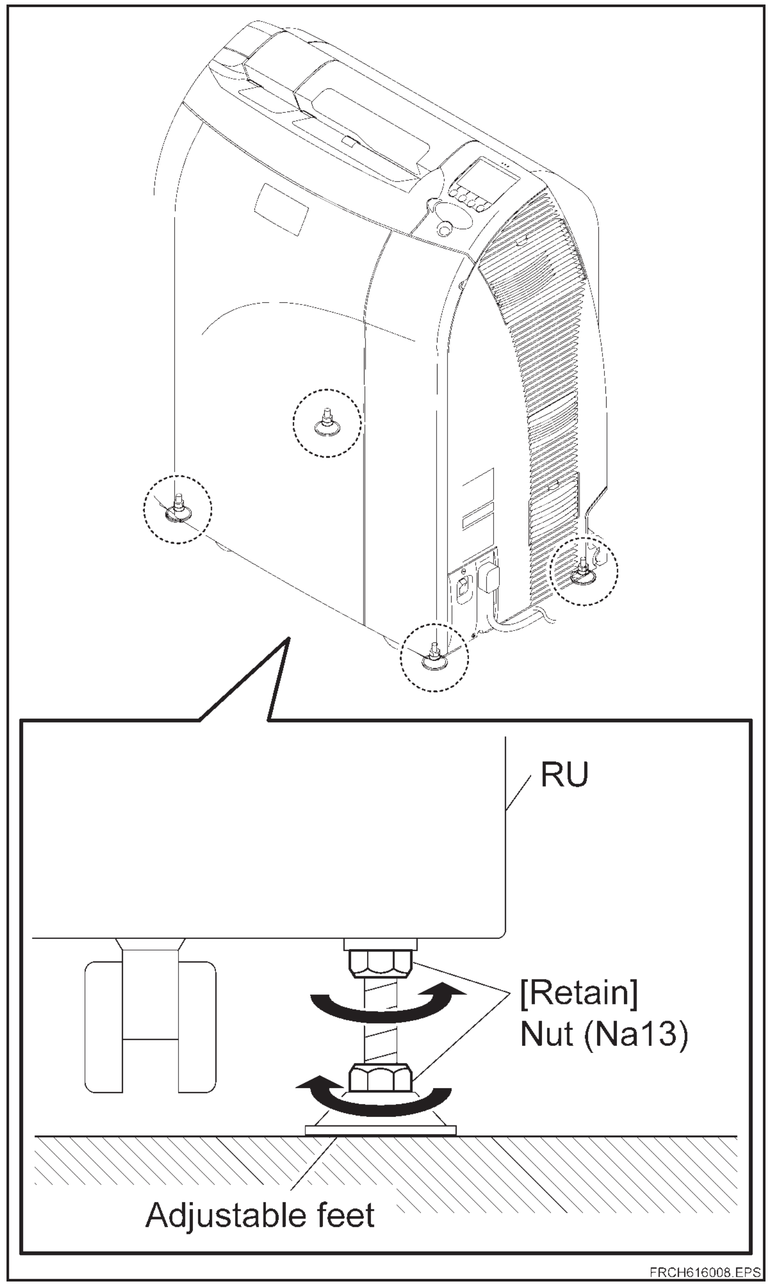
Do not tie or bundle the power cable in such a manner that it is overloaded.


GOOD
NO GOOD
FRCH616006.EPS


Outlet
Right-hand side of the machine
[Connect] Power plug
Pawer cable
FRCH616007.EPS

15.2 Securing the Machine

1. **Lower the adjustable feet to settle the machine.**


RU
[Retain] Nut (Na13)
Adjustable feet
FRCH616008.EPS

15.3 Checking for Improper Protective Grounding

1. **Check that the power cable and additional protective ground wire connections are established in the same manner as for installation.**

   ◇ REFERENCE ◇

   Check the additional protecting ground wire only when the machine is installed in the patient environment.

2. **Check that the parts and cables removed for servicing purposes are connected in the same manner as for installation.**
3. **Check to ensure that the screws once removed are snugly retained.**

16. Checking the Image/Conveyance

1. **Check the image/conveyance.**

   ☞ **{PM:3_Checking the Image/Conveyance}**

17. Confirming the S Value

The procedure set forth below is used to read an IP, which has been exposed to 1 mR of radiation, during a 1-minute period between 10 and 11 minutes after an X-ray exposure, output the read image, and check that the S value for 1 mR of radiation, which is determined from the displayed S value and average dose value, is within the control limits.

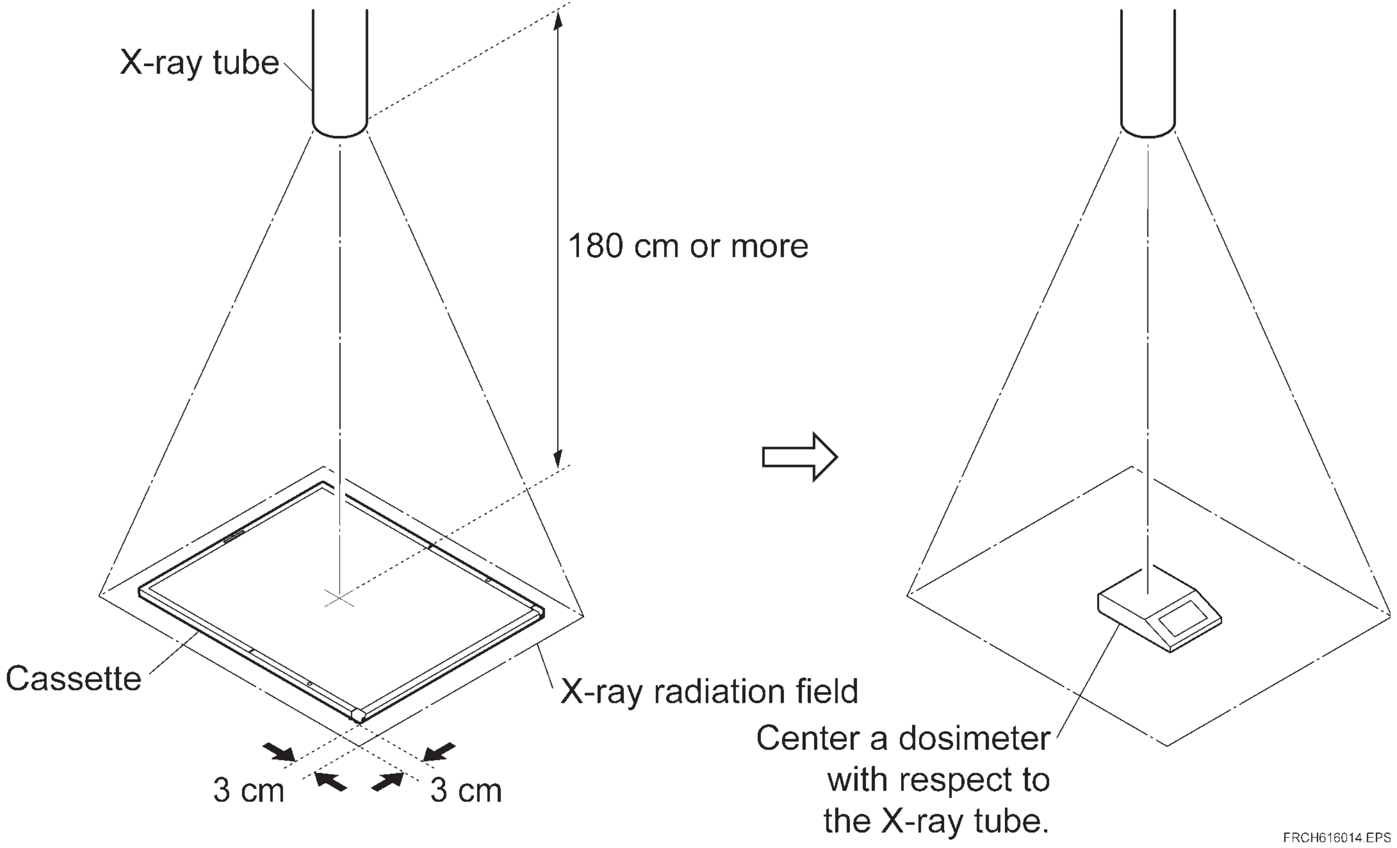
◇ *REFERENCE* ◇

The method for calculating the S value control limits is outlined below:

- *S value control limits for user adjustments*
  - *Upper limit: 200 x 1.5 = 300*
  - *Lower limit: 200/1.5 = 133*
- *S value control limits for service technician adjustments*
  - *Upper limit: 200 x 1.3 = 260*
  - *Lower limit: 200/1.3 = 154*

To eliminate the necessity for adjusting the machine within a short period of time after service technician inspection/adjustment, the S value control range for service technician adjustments is narrower than that for user adjustments.

1. **Position a cassette so that the cassette center coincides with the X-ray radiation field center. Perform setup so that the X-ray radiation field outline is approximately 3 cm outside the cassette outer frame. Temporarily remove the cassette and then position a dosimeter at the radiation field center.**



2. **Set the tube voltage to 80 kVp. Confirm the exposure conditions under which the radiation dose is 1 mR.**

◆ **NOTE** ◆

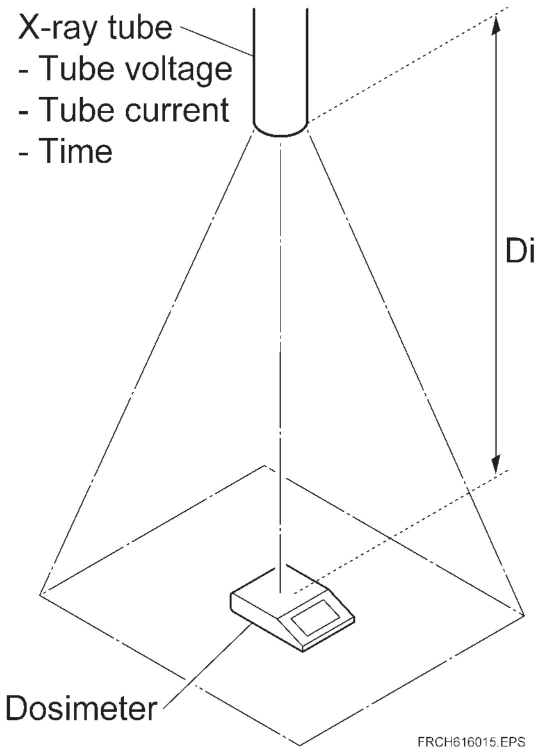
If the radiation dose measured by the dosimeter is not 1 mR, leave the tube voltage at 80 kVp and adjust the distance, tube current, and time to obtain a radiation dose of 1 mR. Record the adjusted exposure conditions.

- *Distance: ___cm*
- *Tube voltage: ___kVp*
- *Tube current: ___mA*
- *Time: ___sec*

◇ *REFERENCE* ◇

If the exposure conditions are unknown, use the following values as the reference values and make fine adjustments:

- Distance: 180 cm
- Tube voltage: 80 kVp
- Tube current: 50 mA
- Time: 0.013 sec



3. **Under the exposure conditions confirmed in step 2, measure the radiation dose five times and average the measured values.**

--- Example ---

First measurement	Second measurement	Third measurement	Fourth measurement	Fifth measurement	Average value
0.9	1.0	1.1	1.2	1.0	1.04

4. **Enter the exposure conditions and the average radiation dose determined in step 3 in the "FCR S Value Control Table."**

5. **Subject the natural radiation and image stored on the employed IP to secondary erasure.**

   ☞ **{Instruction Manual}**

   ◆ **NOTE** ◆

   Before secondary erasure, confirm that no important image data is recorded on the employed IP.

6. **Under the exposure conditions confirmed in step 2, expose a 14" x 14" (35 cm x 35 cm) or 14" x 17" (35 cm x 43 cm) IP to X-ray radiation.**

   ◆ **NOTE** ◆

   Use the largest size IP of all the IPs used at the institution.

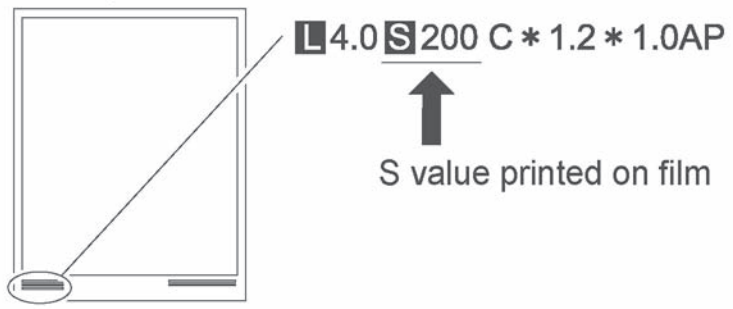
7. **Read the IP exposed in step 6 during a 1-minute period between 10 and 11 minutes after the exposure by using the "QC/TEST," "Image Format" or "Image Format - 2," and "SINGLE" CR Console menus, and then output the read image.**

8. **Determine the "S value for 1 mR of radiation" from the displayed S value (the S value printed on the film or displayed on the CR Console screen) and the average radiation dose value obtained in step 3.**

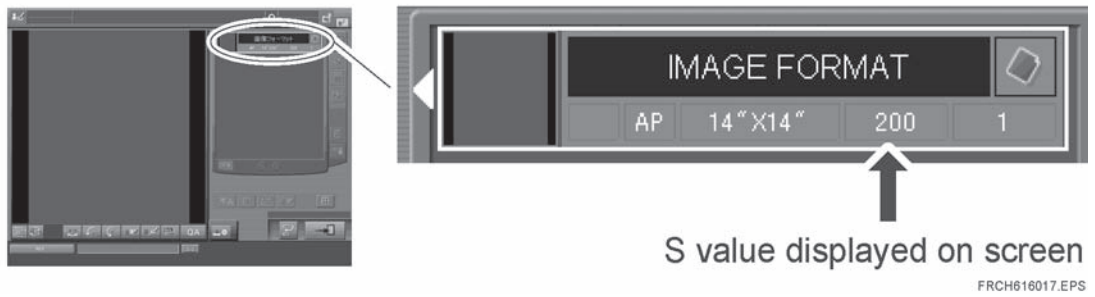
   --- Example ---

Displayed S value:	200
Average radiation dose value obtained in step 3:	1.04

● Film output



● CR Console screen



S value for 1 mR of radiation = Displayed S value x average radiation dose value
= 200 x 1.04
= 208

9. **Check that the "S value for 1 mR of radiation," which was determined in step 8, is within the control limits.**

   --- Example ---

Lower control limit value				Upper control limit value
154	<	208	<	260

↑

Check that the "S value for 1 mR of radiation," which was determined in step 8, is between the upper and lower control limit values.

◆ **NOTE** ◆

If the "S value for 1 mR of radiation," which was determined in step 8, is not between the upper and lower control limit values, make sensitivity correction as directed in "15.3 Sensitivity Correction" and then confirm the S value again.

☞ ***{MC:15.3_Sensitivity Correction}***

18. Checking the Error Log

1. **Check the error log.**

   ☞ **{PM:2.2_Checking the Error Log}**

2. **Close the RU PC-TOOL window.**
3. **Turn OFF the power of RU.**
4. **Turn OFF the power of CR Console.**

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Control Sheet

Issue date	Revision number	Reason	Pages affected
08.15.2005	00	New release (FM4683)	All pages
11.10.2005	01	Corrections (FM4750)	All pages

CR-IR 357 Service Manual

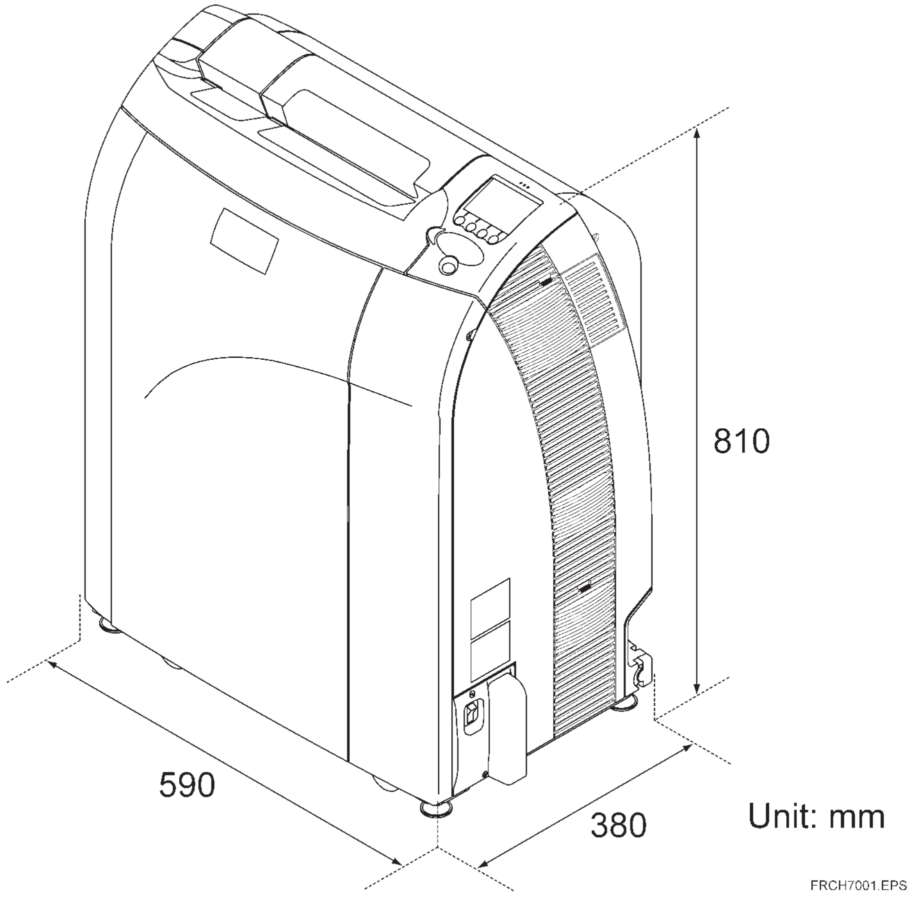
Installation (IN)

1. Specifications of Machine

1.1 Dimensions and Weight

■ Dimensions

W590 x D380 x H810 (mm)



■ Weight

105 kg approx.

1.2 Means for Moving and Fixing the Machine

■ Moving Means

Double-wheel caster (variable-direction/no-brake) x4

■ Fixing Means

- Adjustable foot x4
- Anti-topple retainer: 1 set

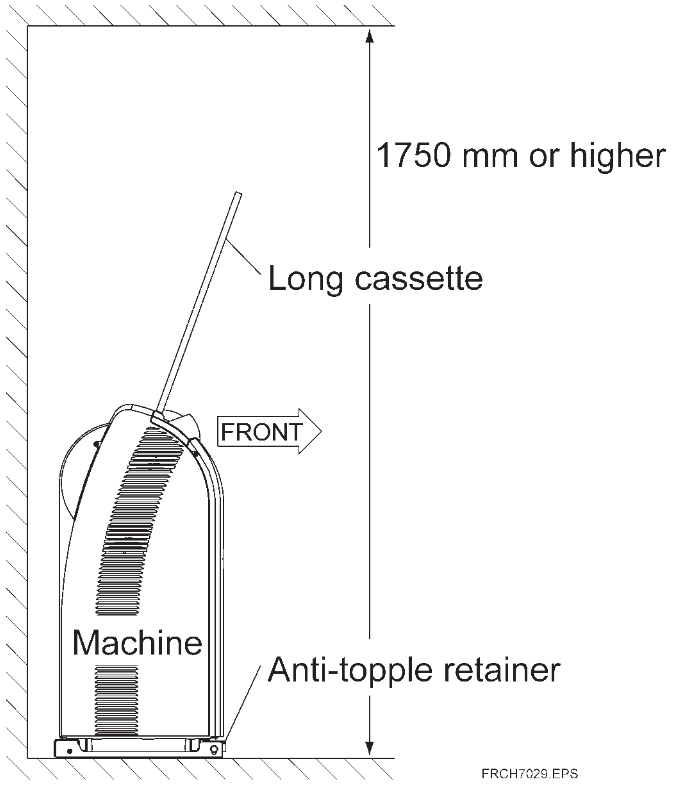
1.3 Servicing Space

The following four kinds of installation patterns are available:
- Retaining with the adjustable feet;
- Retaining the machine by the anti-topple retainer;
- Installing the machine at a user’s site where long cassettes are used;
- Using the supporter

Note that the installation space and the retaining method are limited at a user’s site where a long cassette is used.

⚠ ***WARNING***

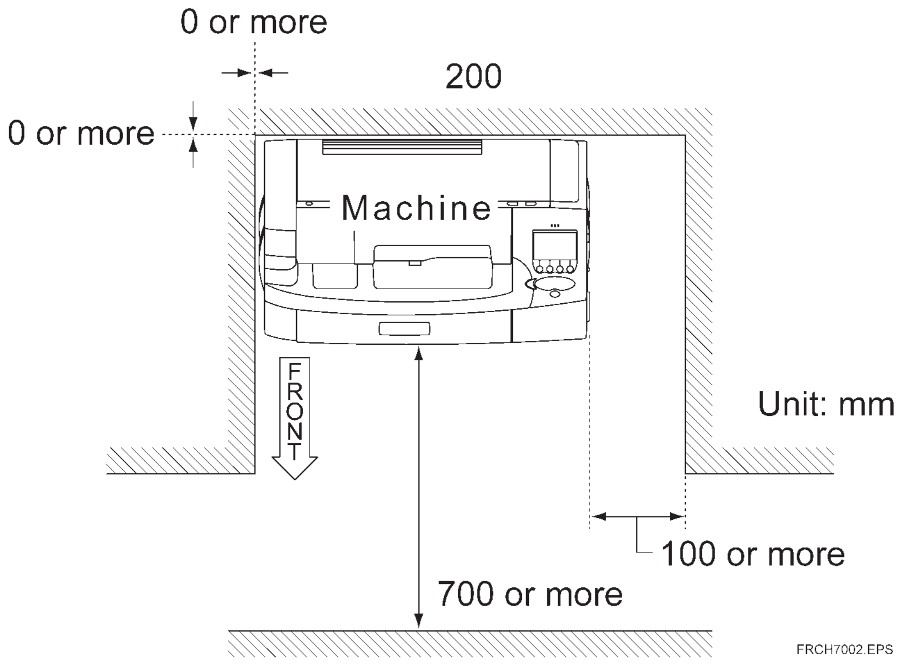
Be sure to observe the following cautions at a user’s site where long cassettes are used.
- ***Fix the machine to the floor by the anti-topple retainer.***
- ***Install the machine where the ceiling height is 1750 mm or higher.***


1750 mm or higher
Long cassette
FRONT
Machine
Anti-topple retainer
FRCH7029.EPS

1.3.1 Retaining with the Adjustable Feet

Shown below is the installation space where the machine is retained with the adjustable feet. When the machine is retained with the adjustable feet, the long cassette cannot be used.

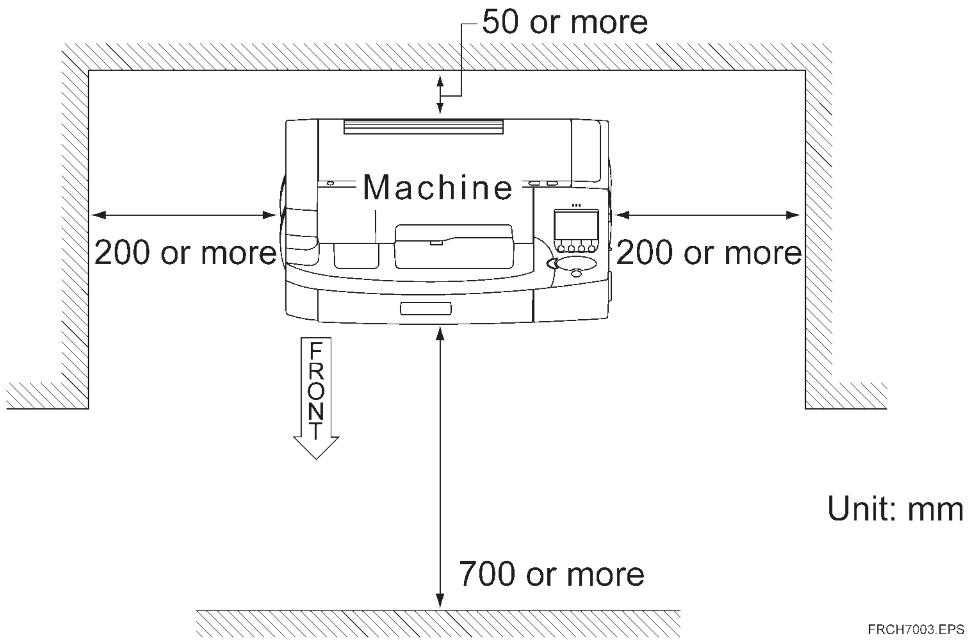
- **Top view**


0 or more
200
0 or more
Machine
FRONT
Unit: mm
100 or more
700 or more
FRCH7002.EPS

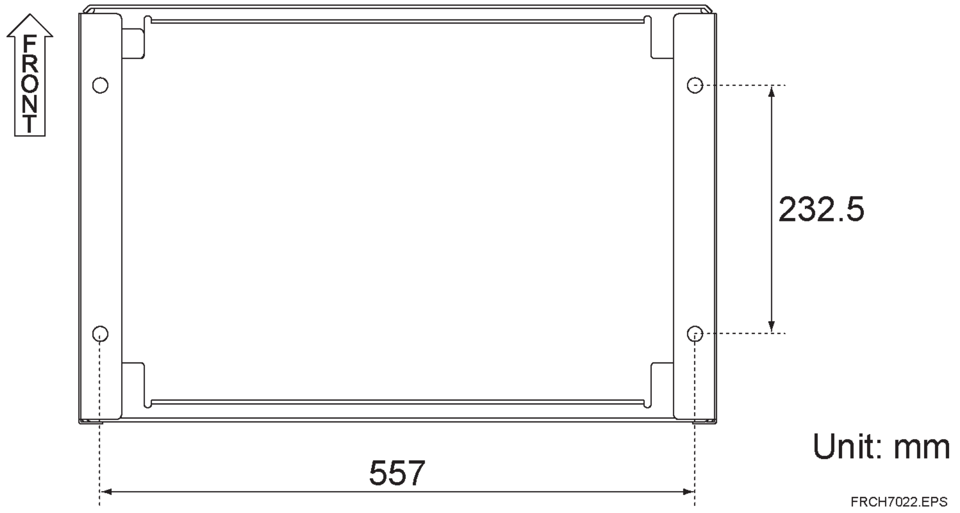
1.3.2 Retaining the Machine by the Anti-Topple Retainer

Shown below is the installation space where the machine is fixed to the floor by means of the optional anti-topple retainer as demanded by the user.

- **Top view**


50 or more
Machine
200 or more
200 or more
FRONT
Unit: mm
700 or more
FRCH7003.EPS

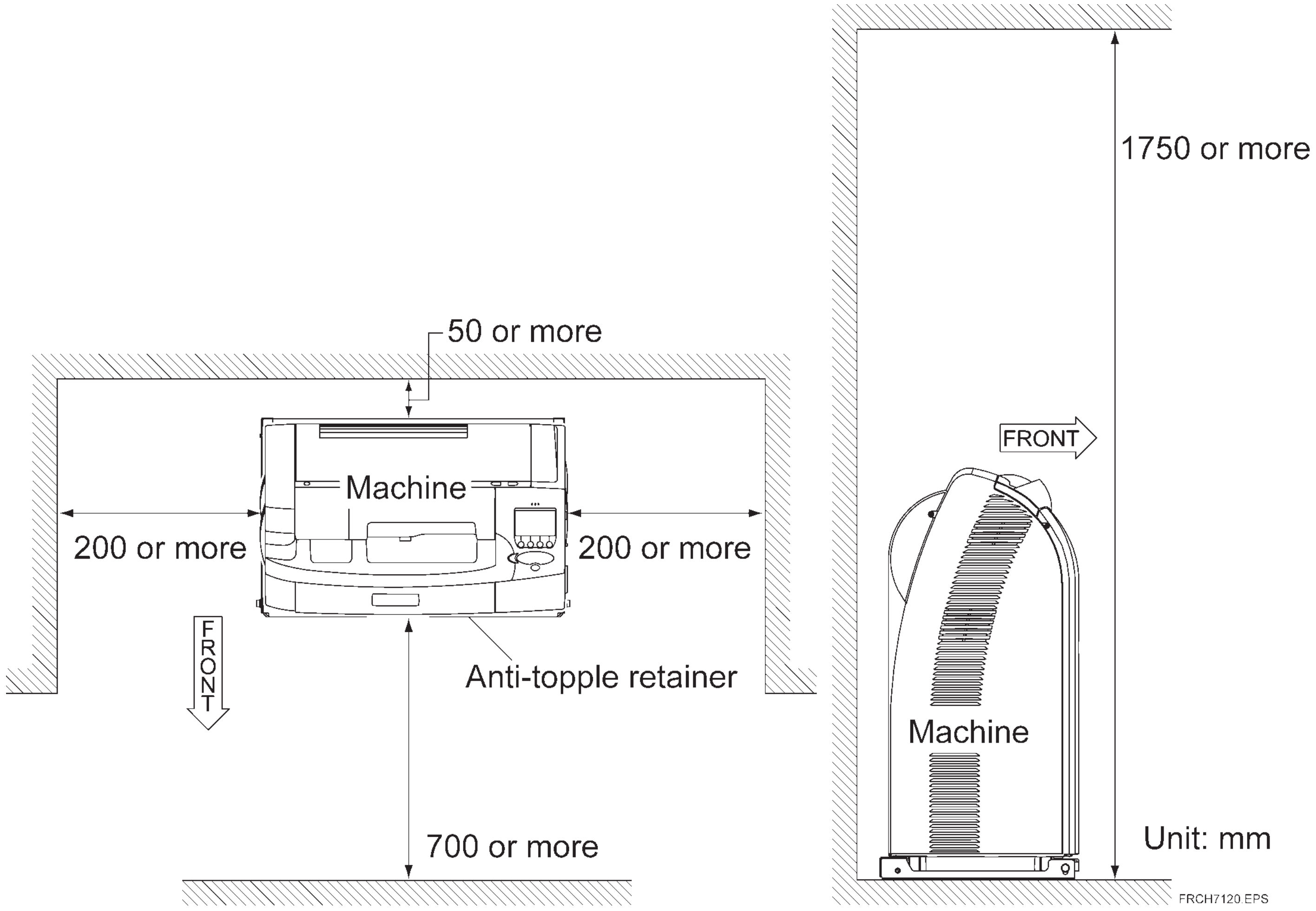
- **Hole locations of the anti-topple retainer**


FRONT
232.5
Unit: mm
557
FRCH7022.EPS

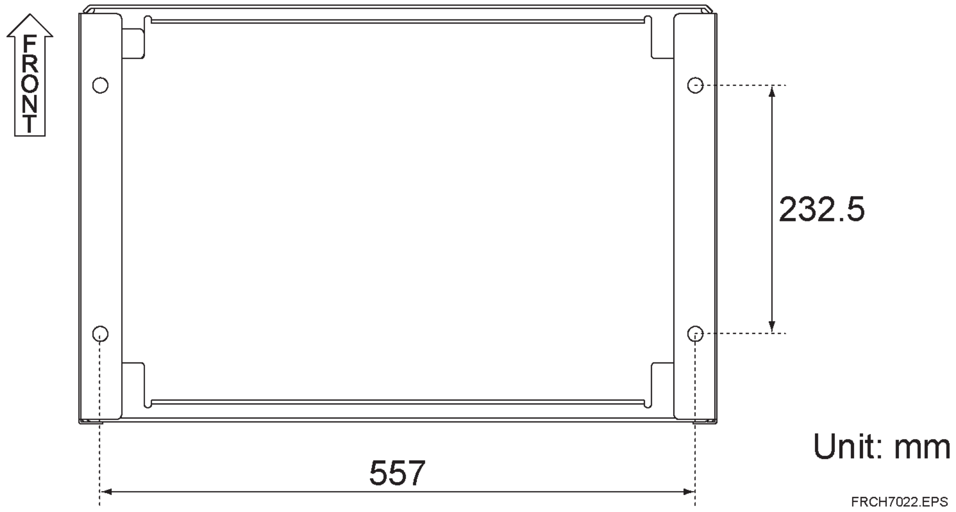
1.3.3 Installing the Machine at a User's Site where Long Cassettes are Used

Shown below is the installation space where the machine is installed at a user's site where long cassettes are used.

- **Top view and side view**


1750 or more
50 or more
FRONT
Machine
200 or more
200 or more
FRONT
Anti-topple retainer
Machine
700 or more
Unit: mm
FRCH7120.EPS

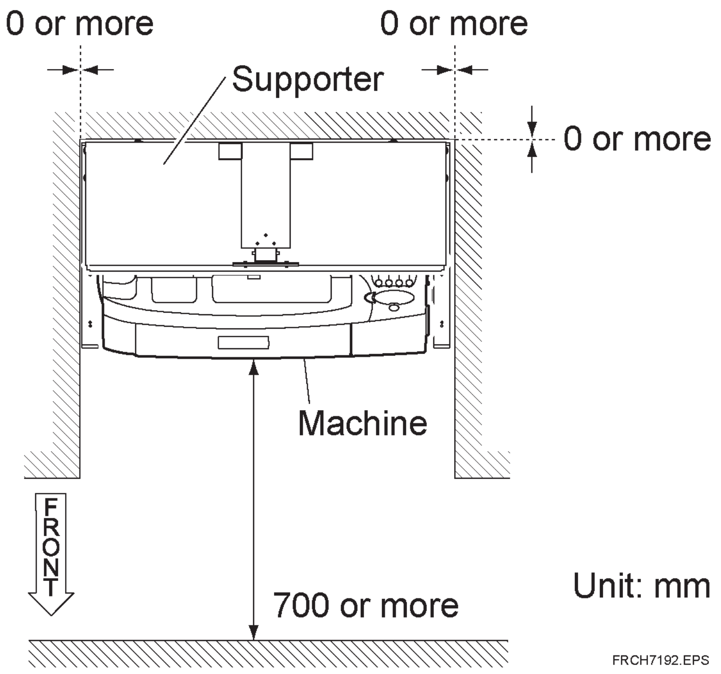
- **Hole locations of the anti-topple retainer**


FRONT
232.5
Unit: mm
557
FRCH7022.EPS

1.3.4 Using the supporter

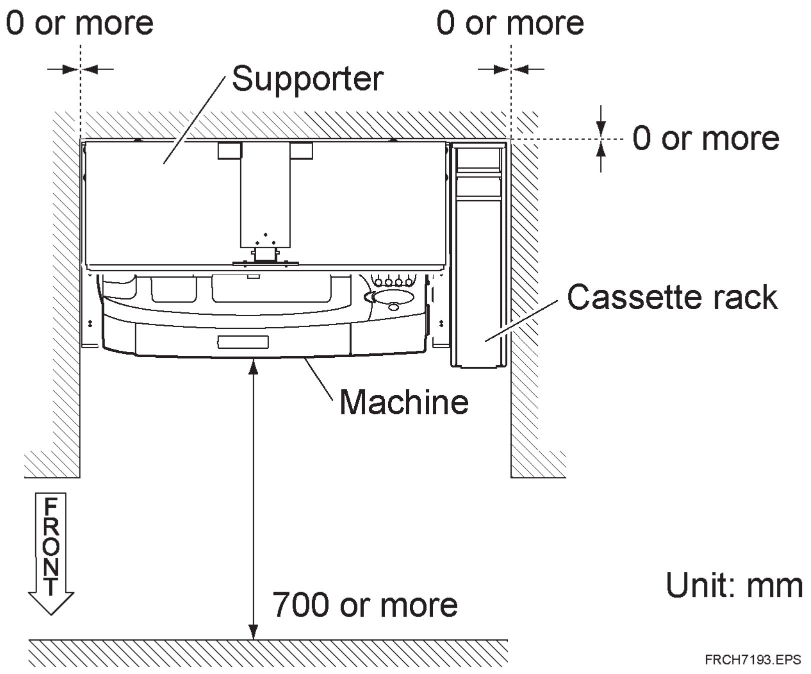
When the supporter is used for installation, the installation space is as indicated below.

- **Installation space required for the supporter only**


0 or more
0 or more
Supporter
0 or more
Machine
FRONT
700 or more
Unit: mm
FRCH7192.EPS

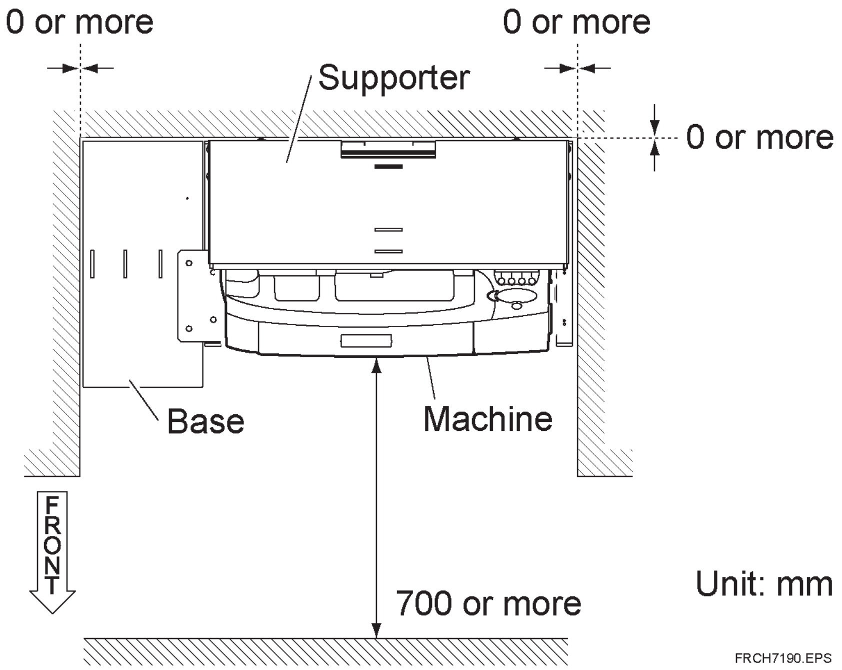
- **Installation space required when the cassette rack is attached to the supporter**

The cassette rack mounting position and installation space are left-right symmetrical.


0 or more
0 or more
Supporter
0 or more
Cassette rack
Machine
FRONT
700 or more
Unit: mm
FRCH7193.EPS

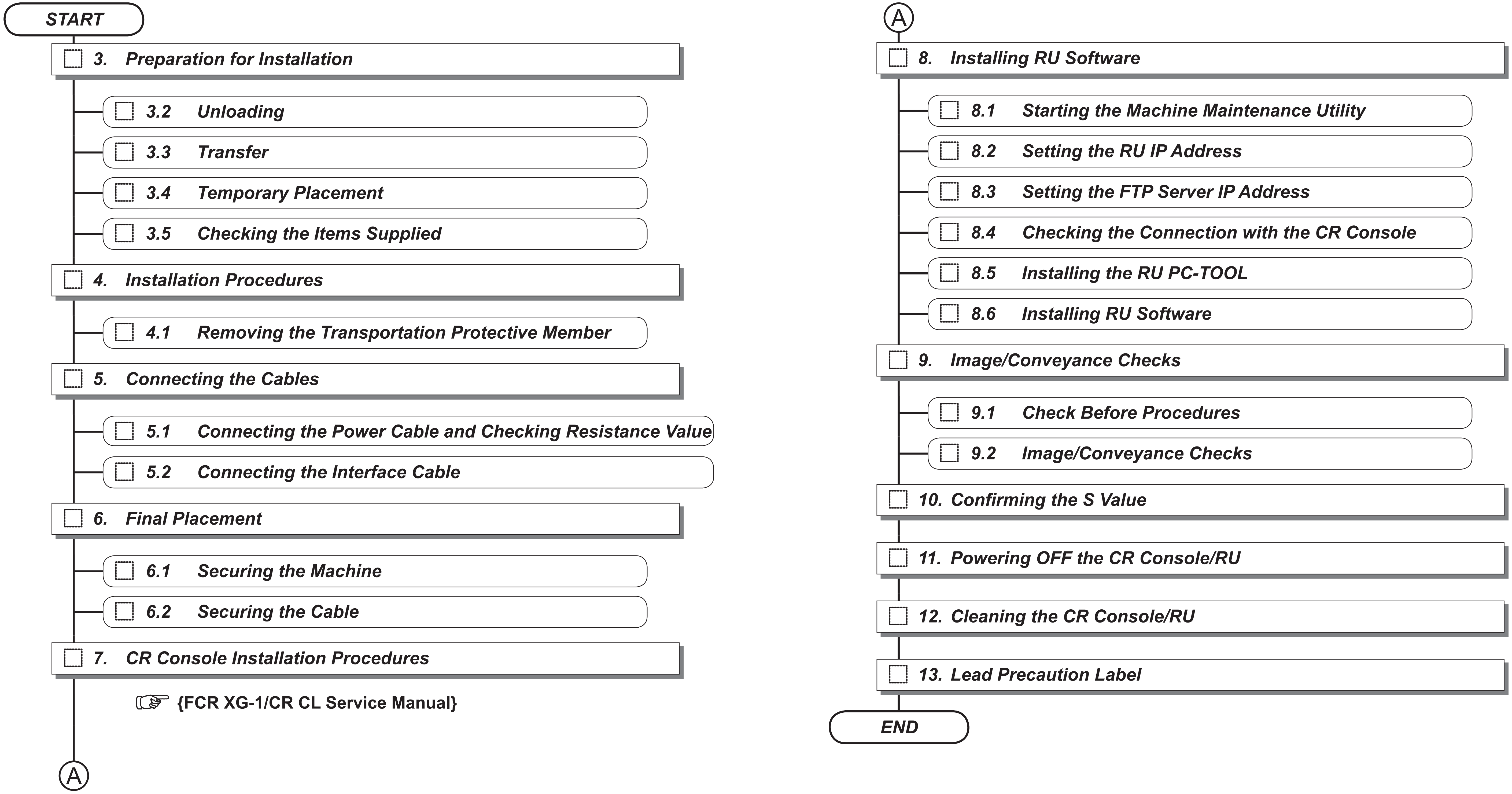
- **Installation space required when the base is attached to the supporter**

The base mounting position and installation space are left-right symmetrical.


0 or more
0 or more
Supporter
0 or more
Base
Machine
FRONT
700 or more
Unit: mm
FRCH7190.EPS

2. Installation Work Flowchart

■ Workflow for First-Time Installation


START
☐ 3. Preparation for Installation
☐ 3.2 Unloading
☐ 3.3 Transfer
☐ 3.4 Temporary Placement
☐ 3.5 Checking the Items Supplied
☐ 4. Installation Procedures
☐ 4.1 Removing the Transportation Protective Member
☐ 5. Connecting the Cables
☐ 5.1 Connecting the Power Cable and Checking Resistance Value
☐ 5.2 Connecting the Interface Cable
☐ 6. Final Placement
☐ 6.1 Securing the Machine
☐ 6.2 Securing the Cable
☐ 7. CR Console Installation Procedures
☞ {FCR XG-1/CR CL Service Manual}
A
A
☐ 8. Installing RU Software
☐ 8.1 Starting the Machine Maintenance Utility
☐ 8.2 Setting the RU IP Address
☐ 8.3 Setting the FTP Server IP Address
☐ 8.4 Checking the Connection with the CR Console
☐ 8.5 Installing the RU PC-TOOL
☐ 8.6 Installing RU Software
☐ 9. Image/Conveyance Checks
☐ 9.1 Check Before Procedures
☐ 9.2 Image/Conveyance Checks
☐ 10. Confirming the S Value
☐ 11. Powering OFF the CR Console/RU
☐ 12. Cleaning the CR Console/RU
☐ 13. Lead Precaution Label
END

3. Preparation for Installation

3.1 Precautions Regarding Installation

The place where the machine is to be installed needs to meet the criteria set forth in "Getting Started" and "3.1.1 Installation Site Requirements." Preinstallation procedures should be performed beforehand for necessary construction work, electrical work, and air-conditioning system installation.

3.1.1 Installation Site Requirements

Avoid the following installation sites:
- Places where the temperature changes drastically.
- Places near heat sources such as heaters.
- Places where water leakage or equipment submersion may occur.
- Places where corrosive gas may be generated.
- Dusty places.
- Places where the machine is subject to constant or excessive vibration or shock.
- Places that are exposed to direct sunlight.
- Places that are exposed to X-rays while the machine is processing.
  Make sure that the machine will never be exposed to direct and scattered X-rays while the machine is processing.
  The size and position of the X-ray shields should be such that the machine is completely shielded to avoid exposure of direct and scattered X-rays to the machine.

- **When installed in the patient environment**

In the room where the machine is to be installed, the hospital-grade grounding terminal and outlet should be provided.
The installation place should be within reach of the cable of the patient environment support cable kit from the hospital-grade grounding terminal and outlet.

- **When installed in other than the patient environment**

Make sure that persons other than routine operators of the machine will not touch the machine inadvertently.

3.1.2 Precautions on Patient Environment

■ **Additional Protective Grounding**

If the RU is installed in the patient environment with the connected equipment in the non-medically used room, the additional protective grounding will be required.
Definitions of "patient environment", "medically-used room", and "non-medically used room" are given below.

- **Patient Environment**

Patient environment is the area for the patient to receive medical procedures (treatment, tests, diagnosis, monitoring).It is the space measuring 2.5 m in all four directions and 2.5 m in height from the area of the patient's body. It excludes the space traveled by the patient to reach the medically-used room.

- **Medically-Used Room**

Room equipped with protective grounding (medical use outlet or medical use grounding terminal) implemented by the medical grounding method. The protective grounding inside the medically-used room is equipotential, and the protective grounding of this medically-used room is equipotential to that in the other medicallyused room. Generally, a portion of the medically-used room is the patient environment.

- **Non-Medically Used Room**

Areas outside the medically-used room are considered the non-medically used room.

3.1.3 Handling Precautions for Printed Circuit Boards and Optical Unit

When servicing a board or optical unit, use a wristband to ground your body.
If you body is not grounded, the electrostatic buildup on your body may damage the electronic parts.

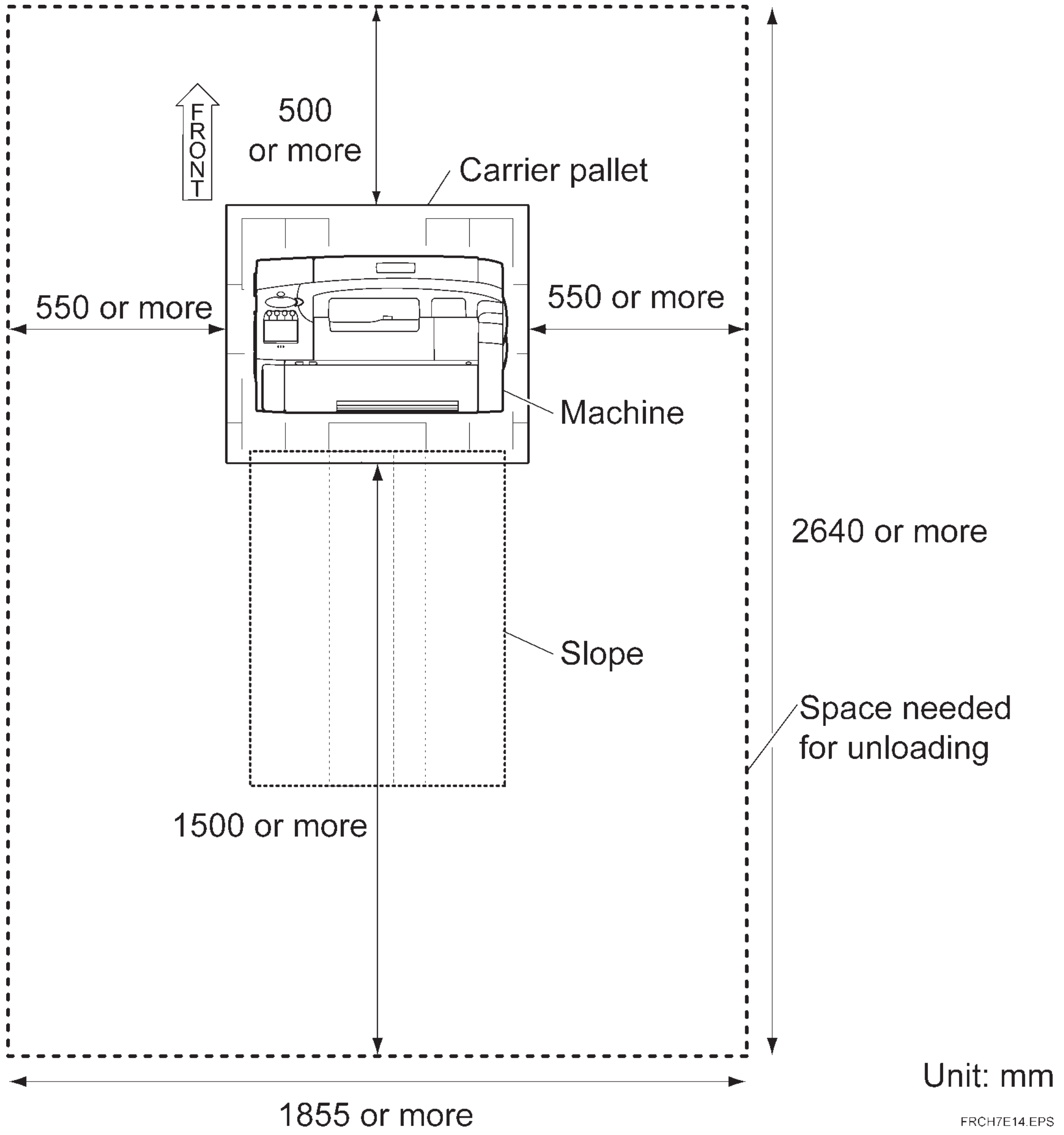
3.1.4 Precautions for System Connection

"Accessory equipment connected to be the analog and digital interfaces must be certified according to the respective IEC Standards. Furthermore all configurations shall comply with the medical system standard, IEC60601-1-1. Everyone who connects additional equipment configures a medical system, and is therefore responsible that the system complies with the requirements of IEC60601-1-1. If in doubt consult with the your local technical service representative."

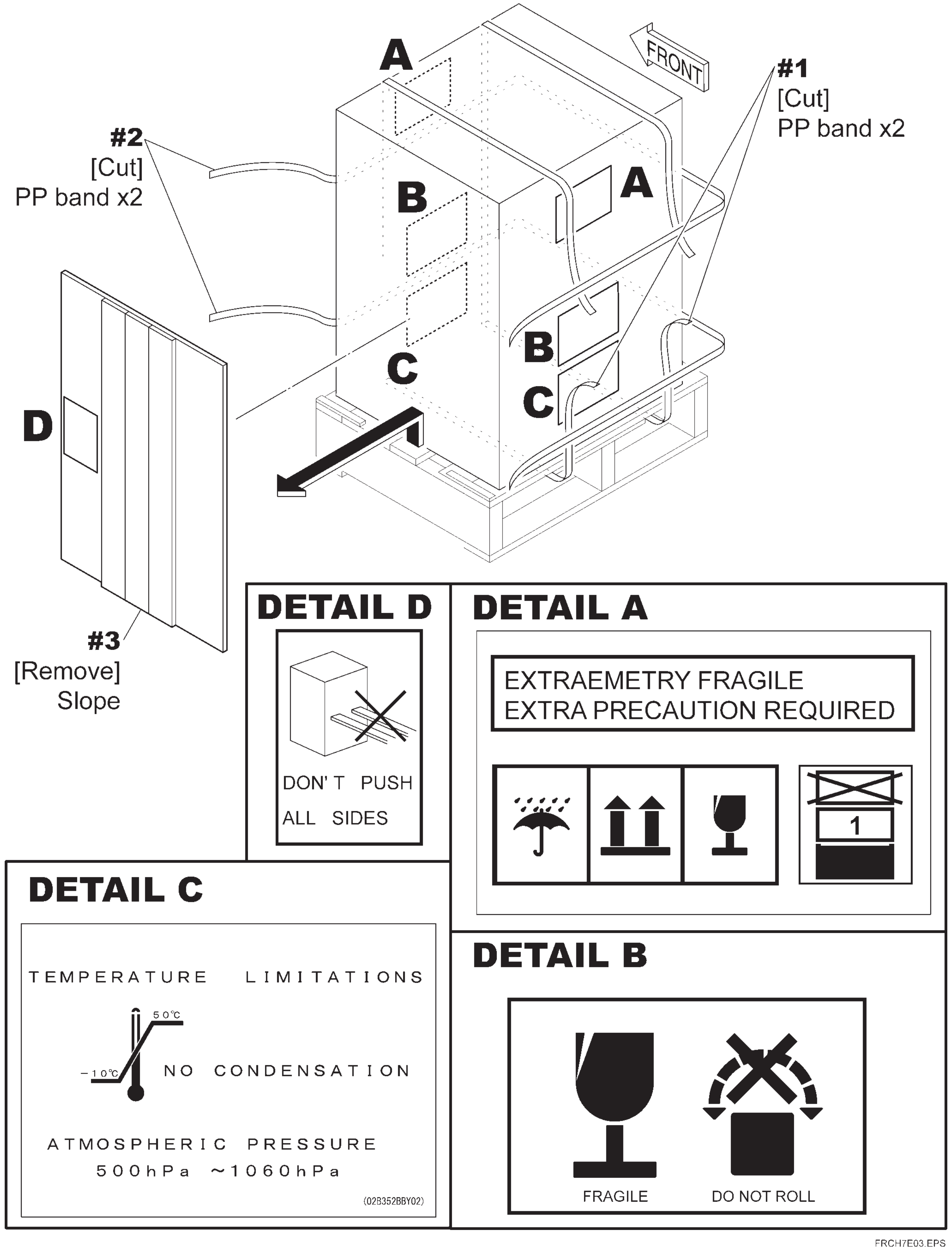
3.2 Unloading

⚠ CAUTIONS

- *When unloading the machine, two persons should always cooperate to do so.*
- *Before unloading the machine, secure a proper machine transfer route.*
- *Unload the machine on a flat space as close to the installation space as possible. If there are many steps or bumps in the machine transfer route, load may be applied to casters, causing damage.*
- *Secure a necessary space for unloading, before unloading the machine together with the carrier pallet from the load-carrying platform of the truck.*


FRONT
500 or more
Carrier pallet
550 or more
550 or more
Machine
2640 or more
Slope
Space needed for unloading
1500 or more
1855 or more
Unit: mm
FRCH7E14.EPS

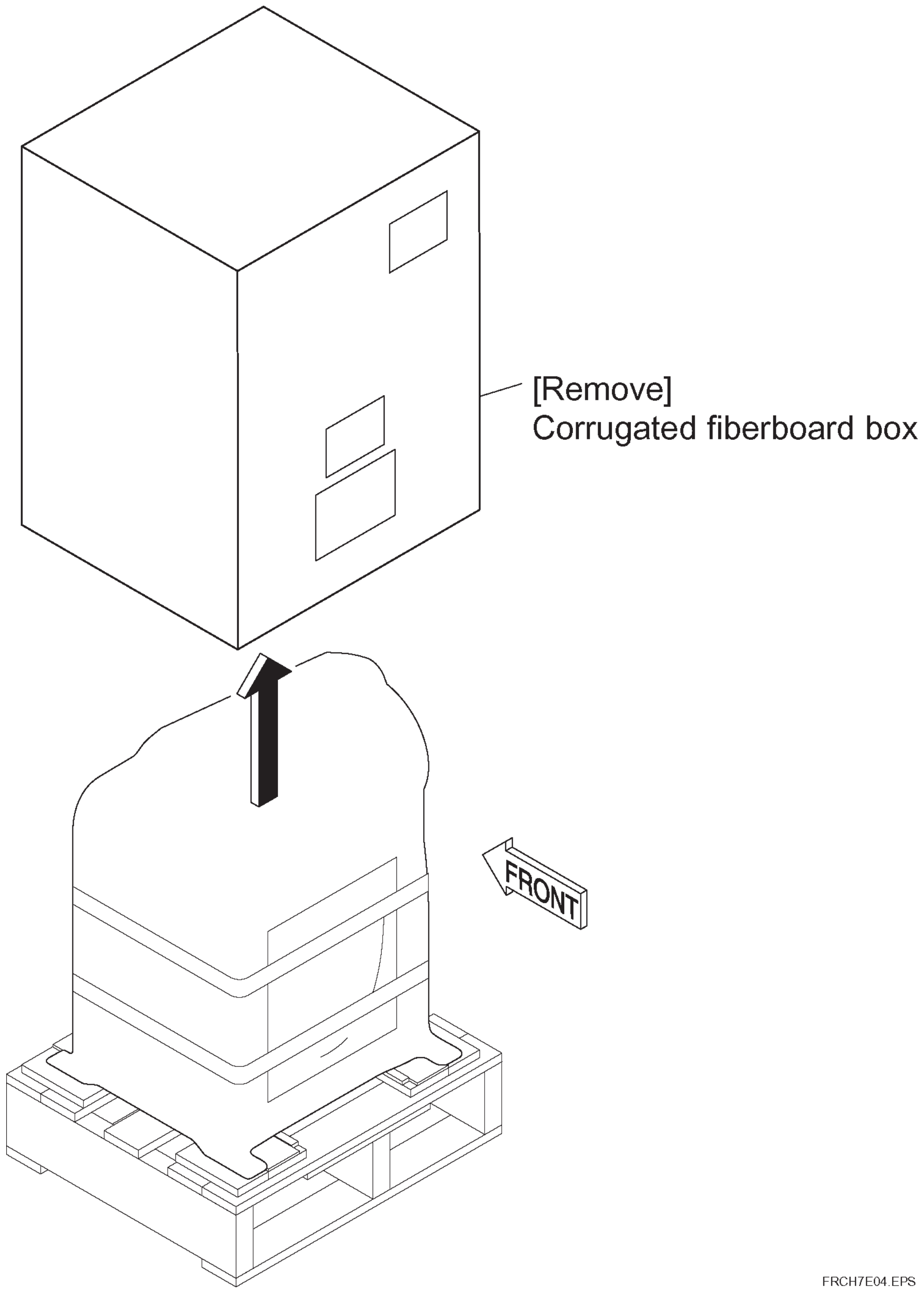
1. **Unload the machine together with the carrier pallet from the load-carrying platform of the truck.**
2. **Cut the polypropylene (PP) band, and remove the slope.**


A
FRONT
#1
[Cut]
PP band x2
#2
[Cut]
PP band x2
B
A
B
C
C
D
#3
[Remove]
Slope
DETAIL D
DON' T PUSH
ALL SIDES
DETAIL A
EXTRAEMETRY FRAGILE
EXTRA PRECAUTION REQUIRED
1
DETAIL C
TEMPERATURE LIMITATIONS
50℃
−10℃
NO CONDENSATION
ATMOSPHERIC PRESSURE
500hPa ~1060hPa
(02B352BBY02)
DETAIL B
FRAGILE
DO NOT ROLL
FRCH7E03.EPS

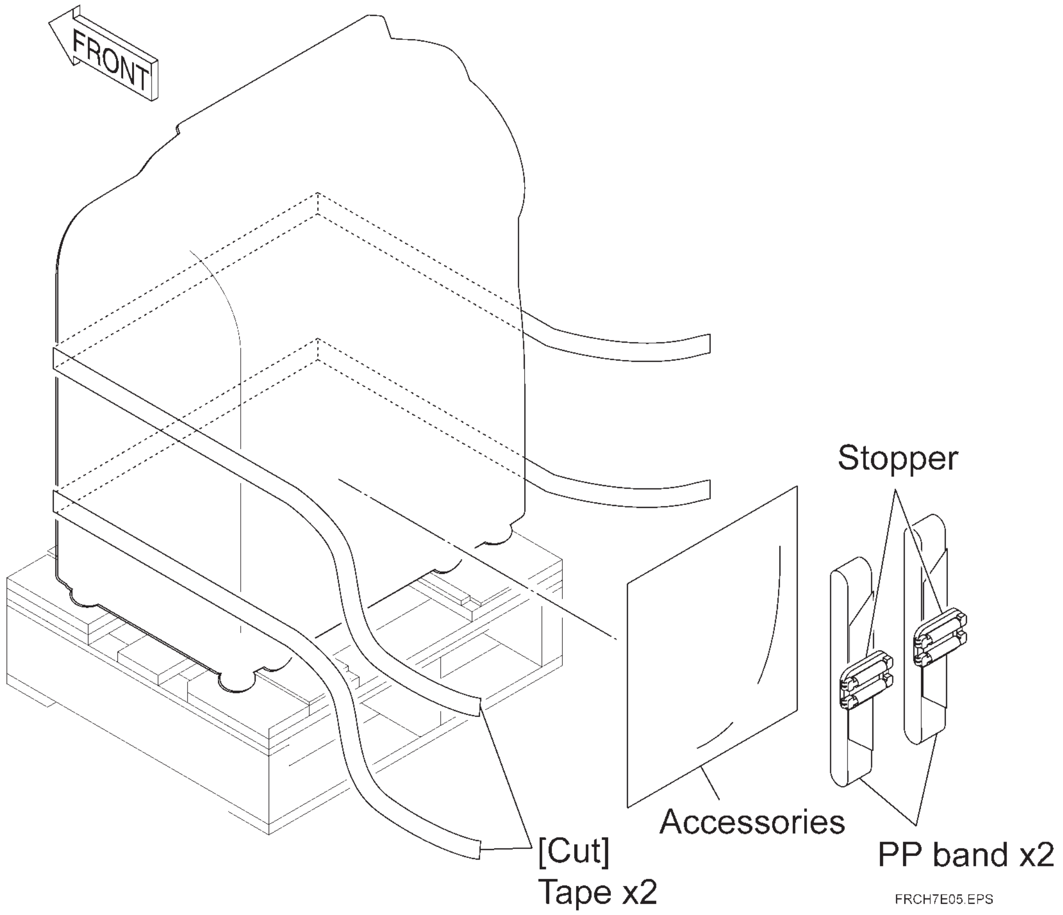
3. **Remove the corrugated fiberboard box.**

◆ **NOTE** ◆

Lift the corrugated fiberboard box straight up not to damage the machine with the edges of the box, for removal.


[Remove]
Corrugated fiberboard box
FRONT
FRCH7E04.EPS

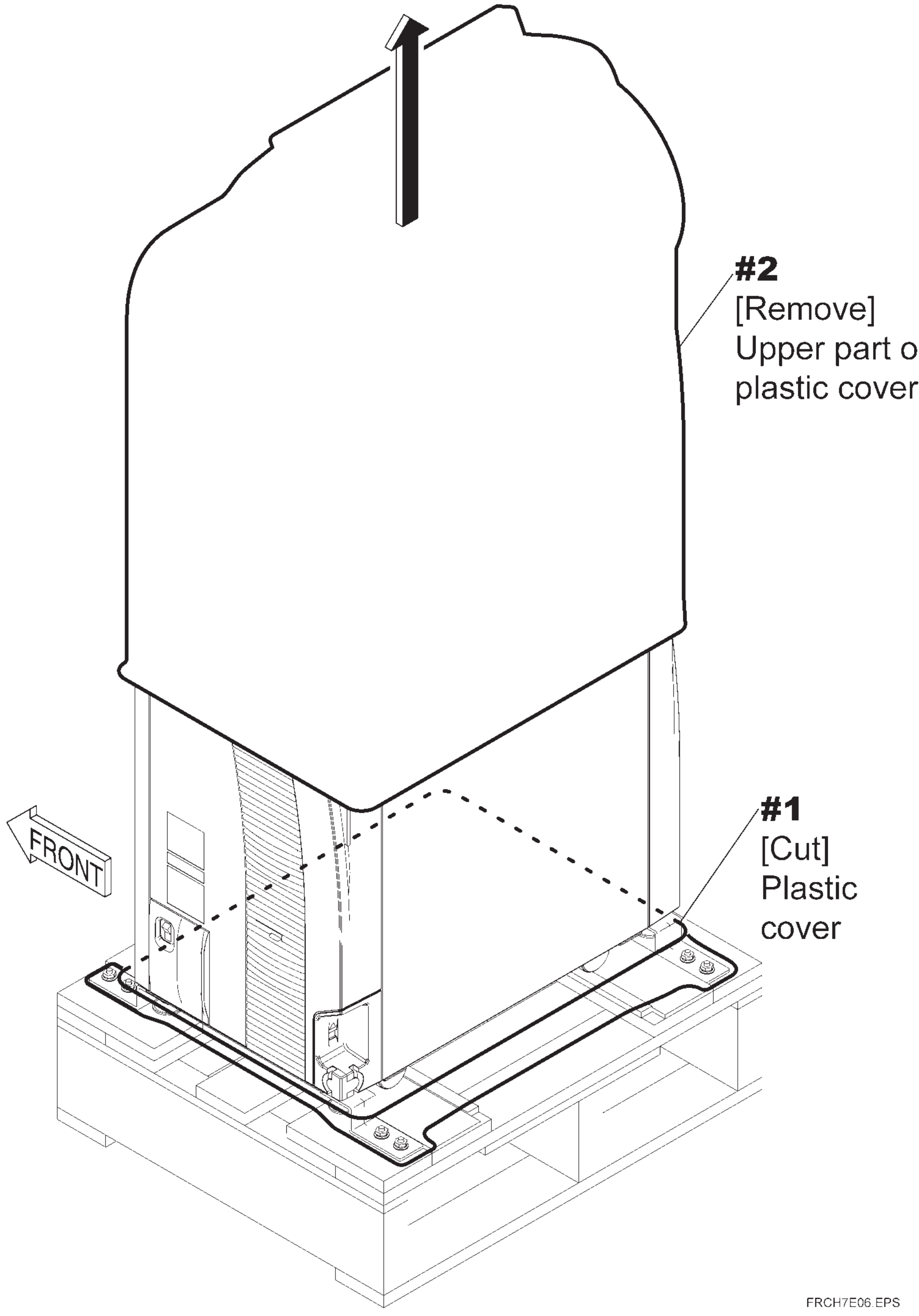
4. **Cut the tapes, and remove the PP bands with stoppers and the bag containing the accessories.**


FRONT
Stopper
Accessories
PP band x2
[Cut]
Tape x2
FRCH7E05.EPS

5. **Cut the lower part of the plastic cover which protects the machine. Remove the upper part of the plastic cover.**

◆ NOTE ◆

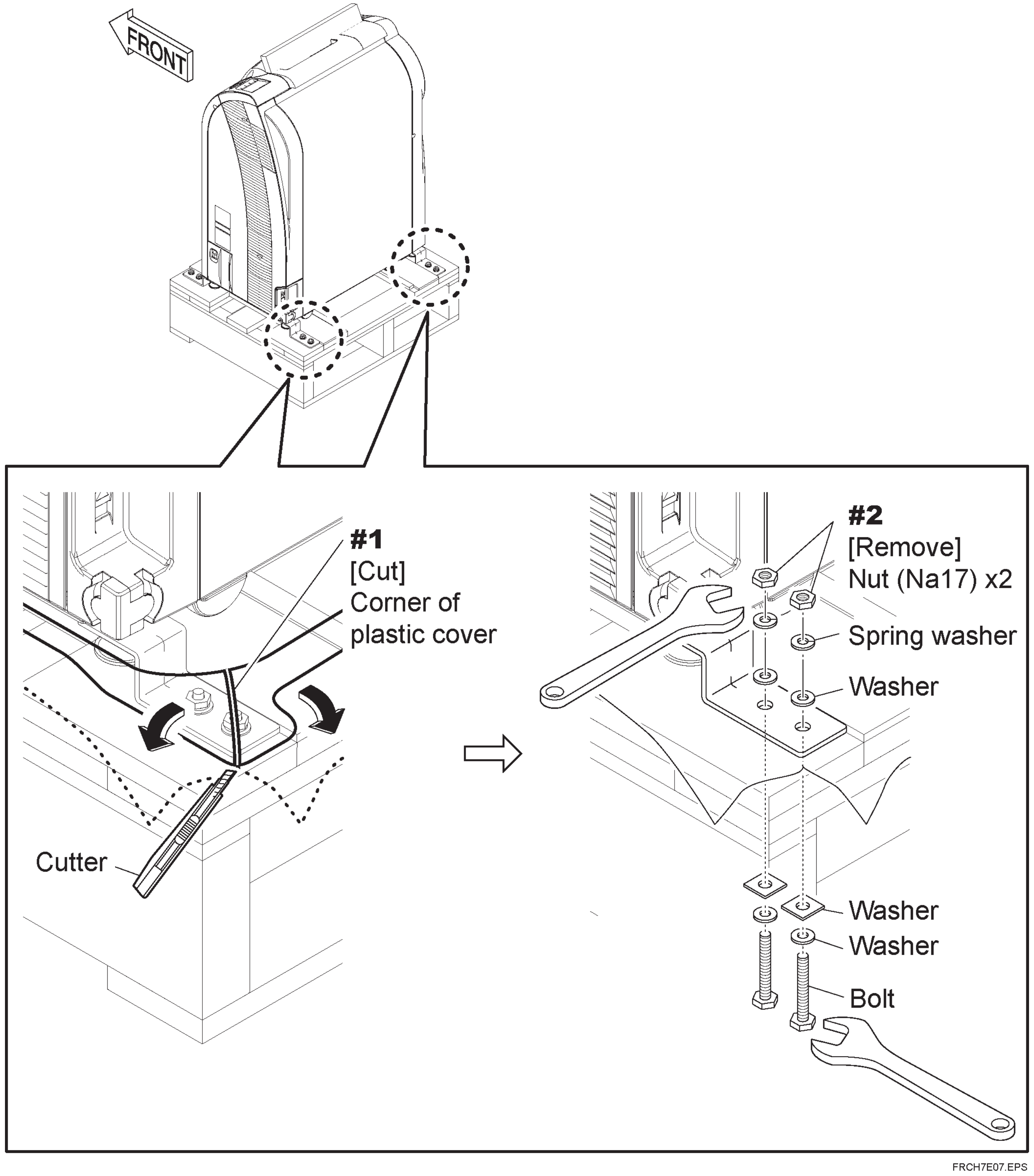
When cutting the plastic cover, cut below the bottom of the machine. Do not damage the machine with a sharp instrument.


#2
[Remove]
Upper part of
plastic cover
#1
[Cut]
Plastic
cover
FRONT
FRCH7E06.EPS

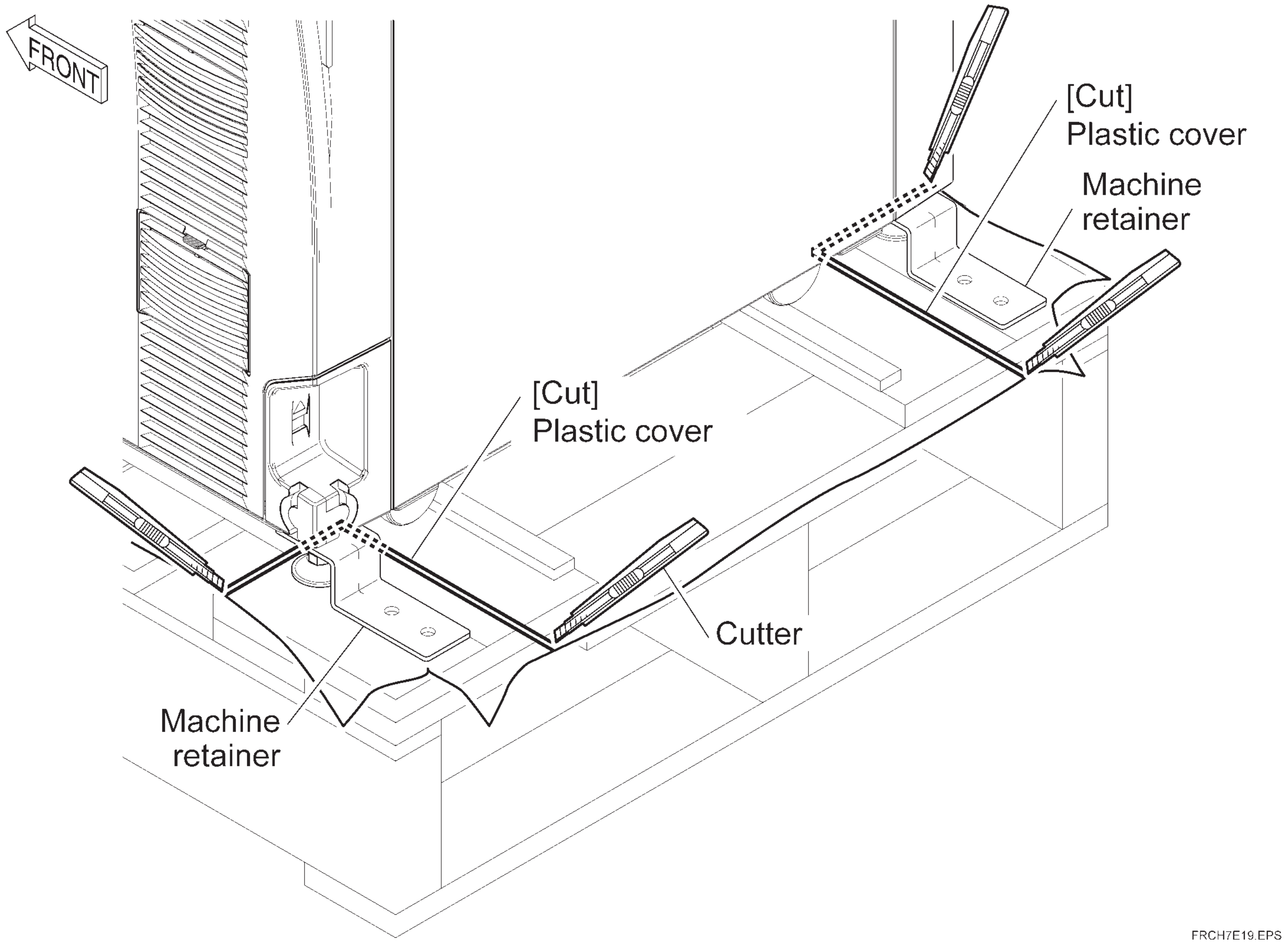
6. **Cut the corners of the plastic cover which cover two right and left machine retainers on the rear of the machine. Then remove the bolts which retain the machine retainers on the rear of the machine.**

◇ REFERENCE ◇

In removing the bolts, use of a 17-mm spanner is recommended to improve workability.


FRONT
#1
[Cut]
Corner of
plastic cover
Cutter
#2
[Remove]
Nut (Na17) x2
Spring washer
Washer
Washer
Washer
Bolt
FRCH7E07.EPS

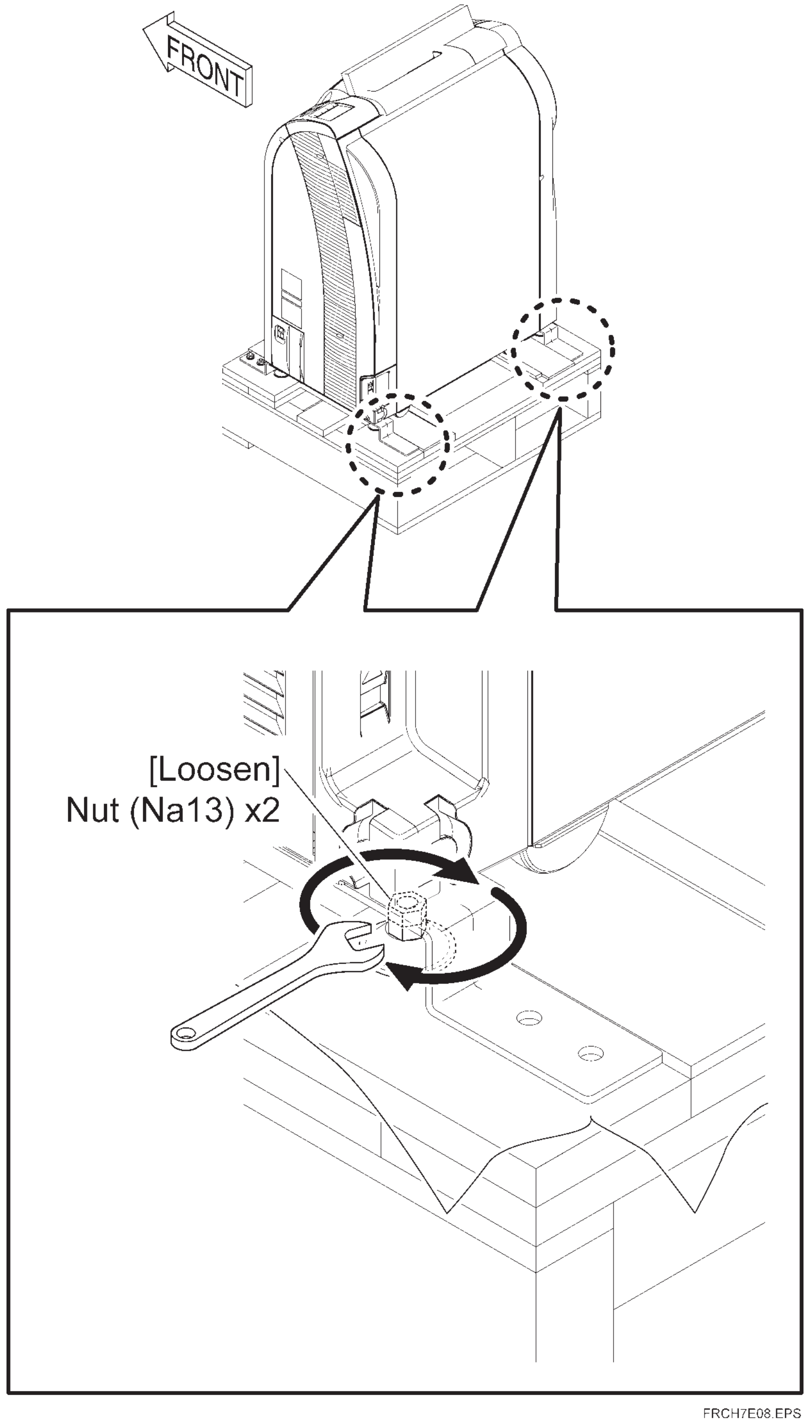
7. **Cut the plastic cover around the machine retainer in an L-shape by a cutter, for easy removal of the two right and left machine retainers on the rear of the machine.**


FRONT
[Cut]
Plastic cover
Machine retainer
[Cut]
Plastic cover
Cutter
Machine retainer
FRCH7E19.EPS

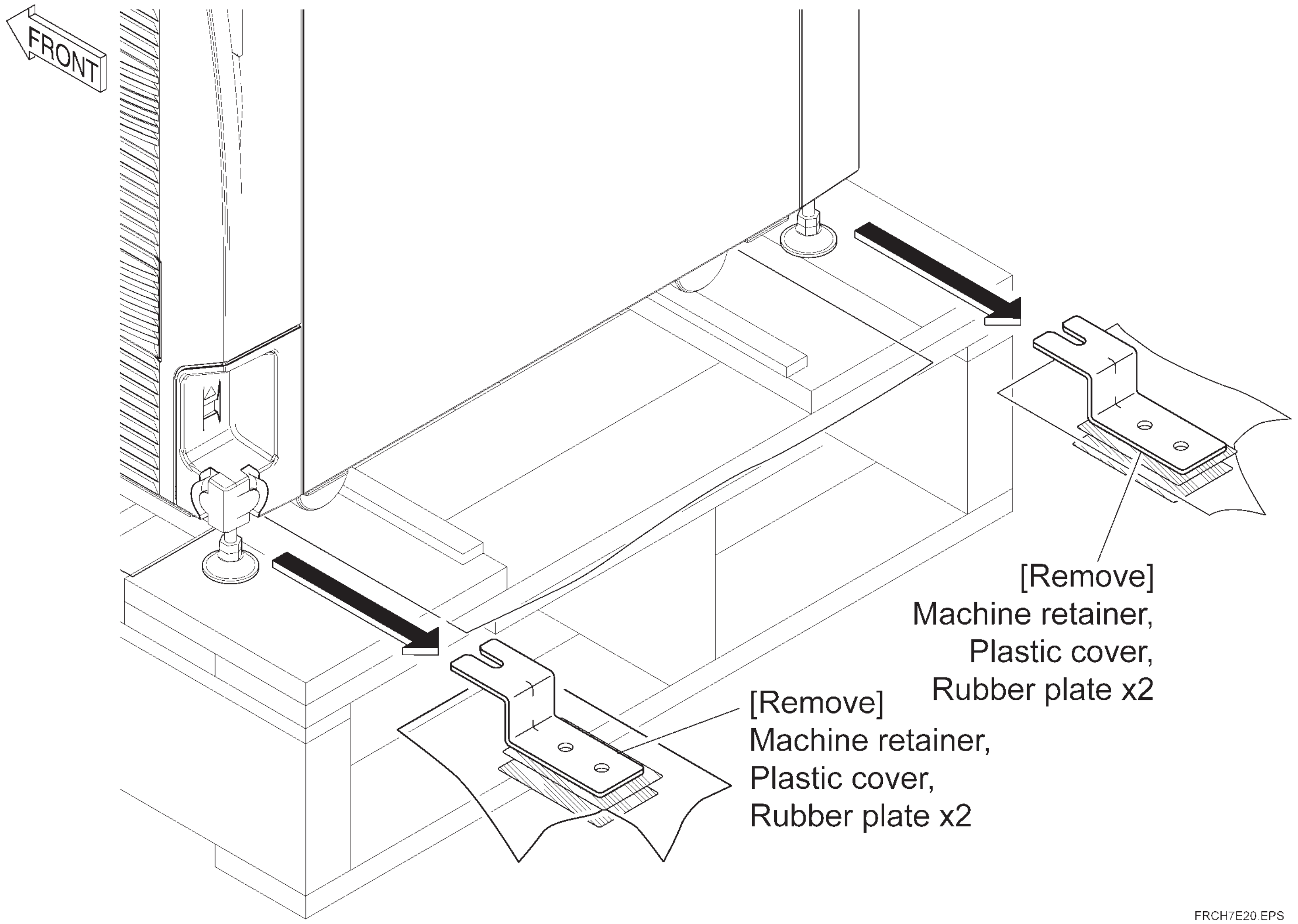
8. **Once loosen the adjustable feet for removing the two right and left machine retainers on the rear of the machine.**

◇ REFERENCE ◇

In loosening the nut of the adjustable foot, use of a 13-mm spanner is recommended to improve workability.


FRONT
[Loosen]
Nut (Na13) x2
FRCH7E08.EPS

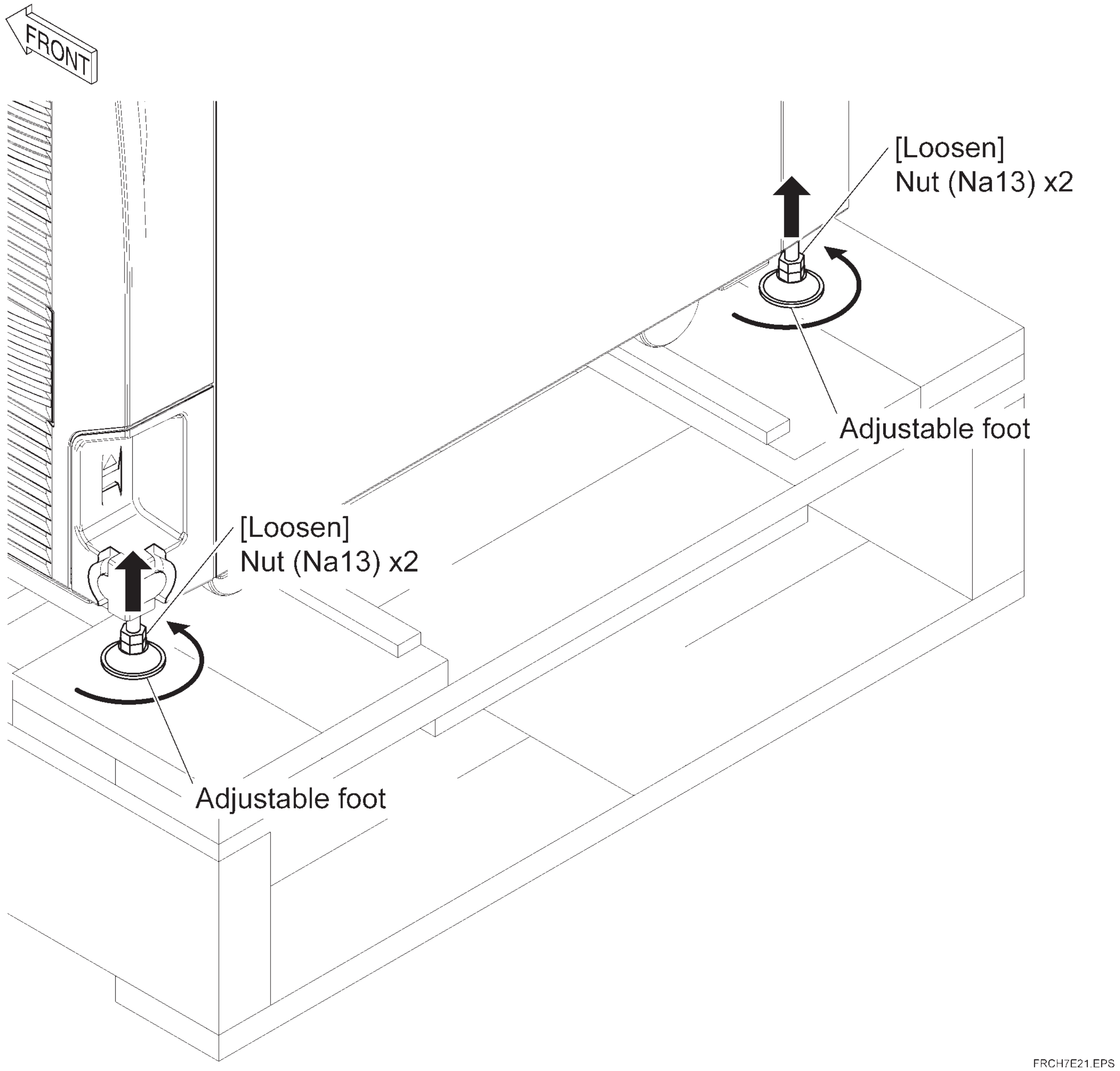
9. **Remove the two machine retainers on the right- and left-hand on the rear of the machine together with their sealing plastic covers and rubber plates.**


FRONT
[Remove]
Machine retainer,
Plastic cover,
Rubber plate x2
[Remove]
Machine retainer,
Plastic cover,
Rubber plate x2
FRCH7E20.EPS

10. **Raise the two adjustable feet on the right- and left-hand on the rear of the machine to the uppermost position.**

CAUTION

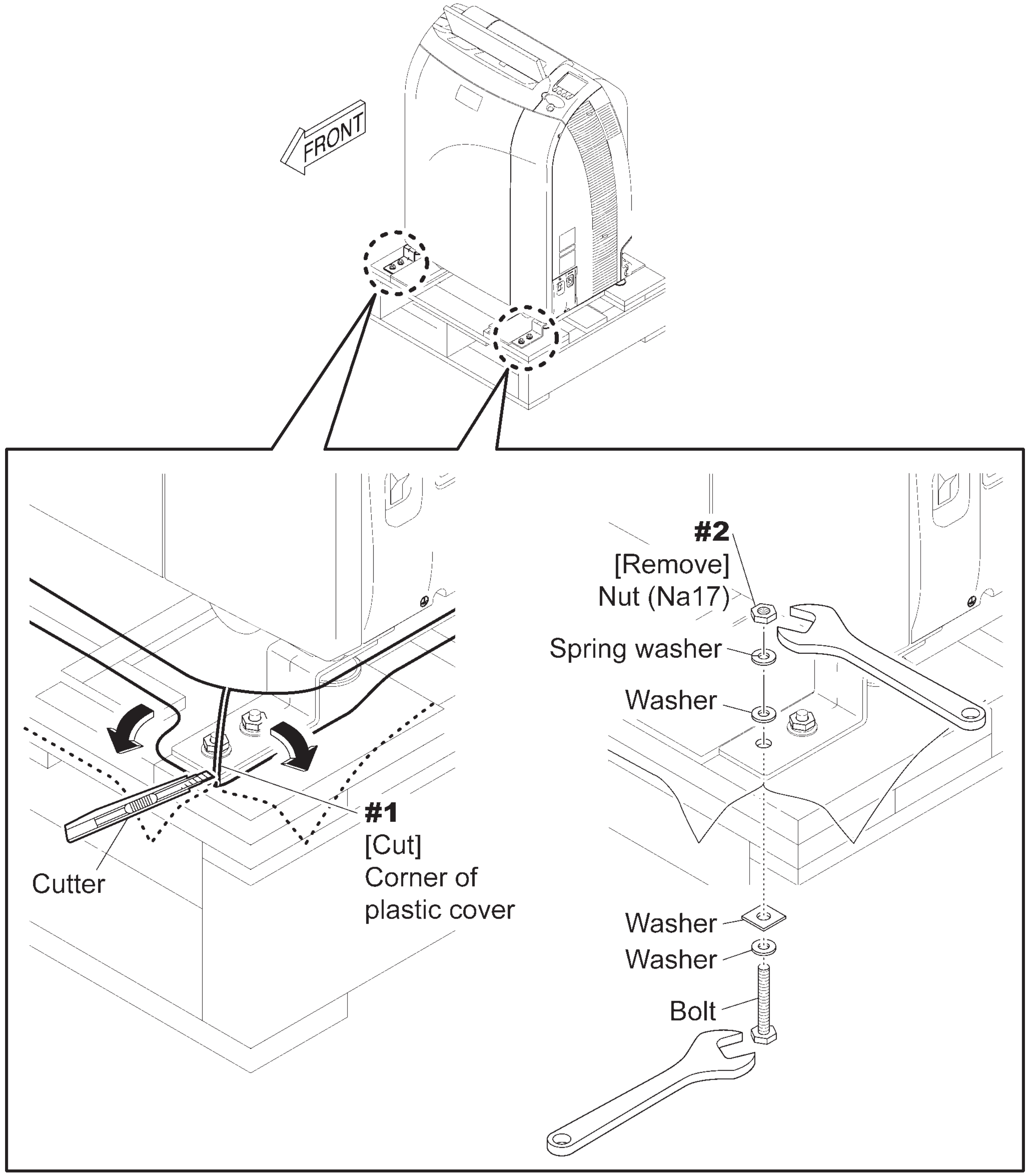
Be sure to raise the adjustable feet to the uppermost position. If the machine is moved with the adjustable feet lowered, they might get caught on the ground, causing the machine to topple down.


FRONT
[Loosen]
Nut (Na13) x2
Adjustable foot
[Loosen]
Nut (Na13) x2
Adjustable foot
FRCH7E21.EPS

11. **Cut the corners of the plastic covers which cover the two machine retainers on the right- and left-hand on the front of the machine by a cutter, and remove the front bolt of the two bolts retaining the machine retainer on the front of the machine.**

CAUTION

Do not remove all of the four bolts which retain the machine retainers on the front of the machine. If removed, the machine is movable, and might drop from the carrier pallet.

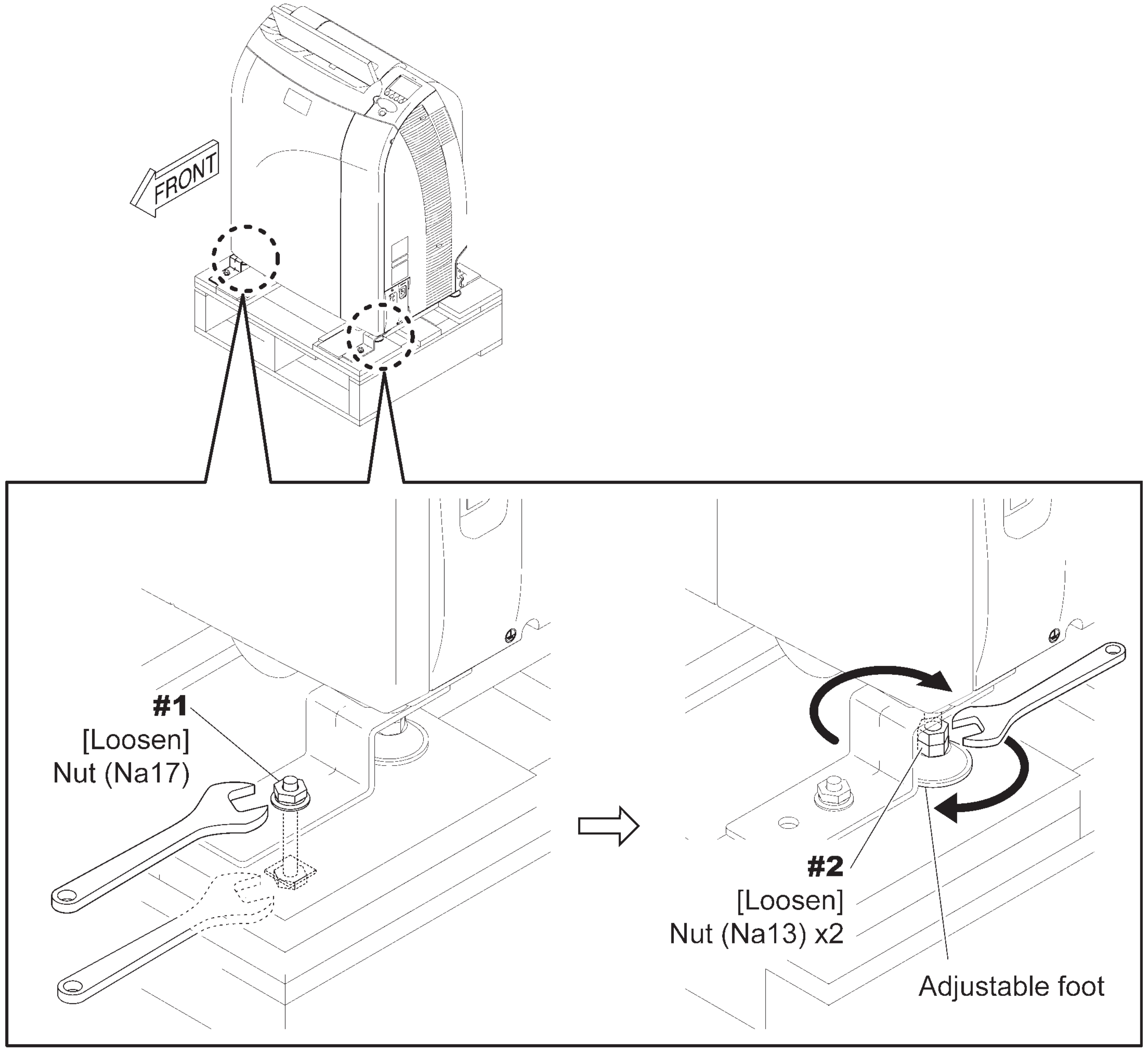

FRONT
#2
[Remove]
Nut (Na17)
Spring washer
Washer
#1
[Cut]
Corner of
plastic cover
Cutter
Washer
Washer
Bolt

FRCH7E09.EPS

12. **Loosen the bolts which retain the two right and left machine retainers on the front of the machine, and then once loosen the adjustable feet on the front of the machine.**

◇ REFERENCE ◇

In loosening the nut of the adjustable foot, use of a 13-mm spanner is recommended to improve workability.

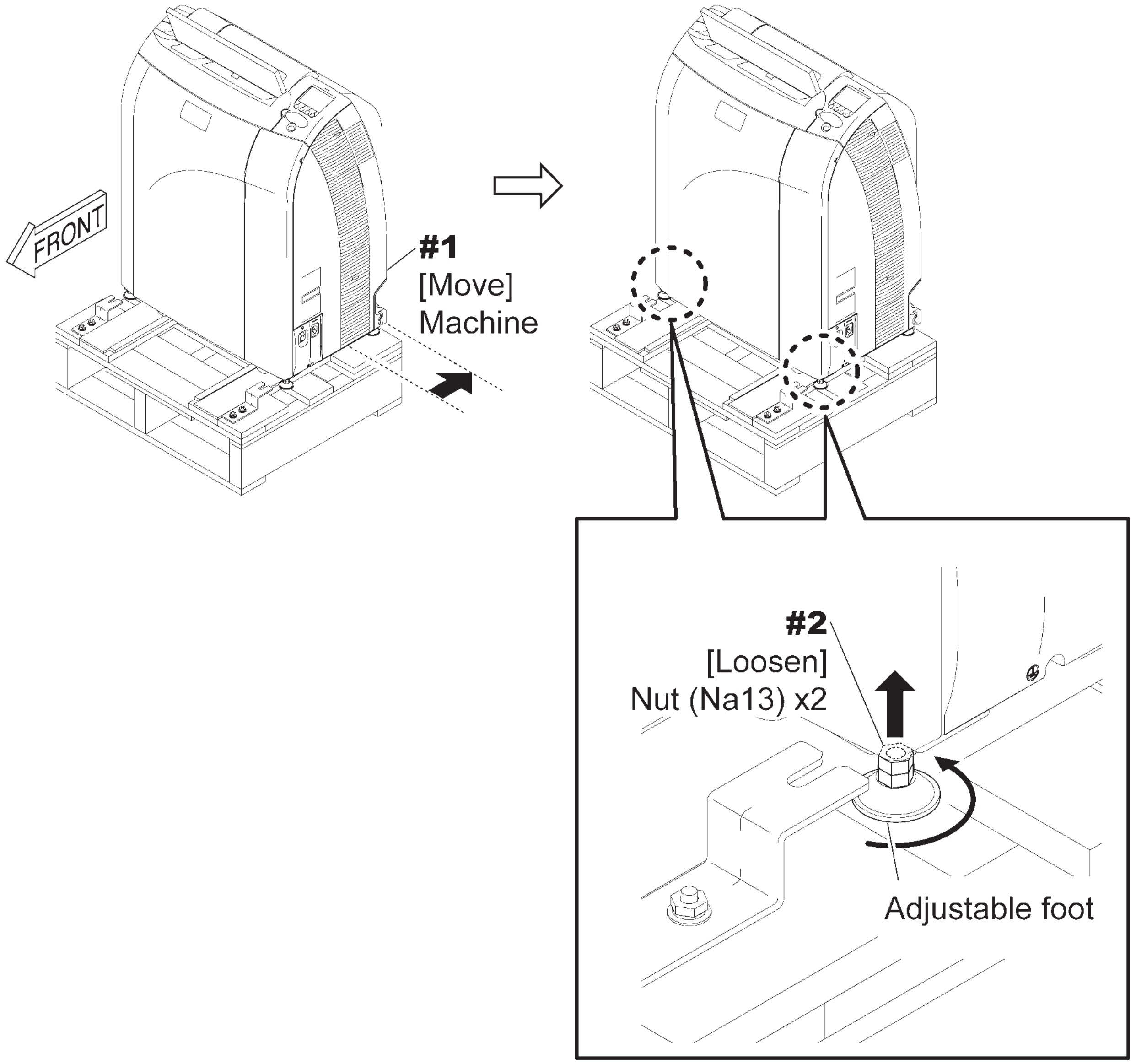

FRONT
#1
[Loosen]
Nut (Na17)
#2
[Loosen]
Nut (Na13) x2
Adjustable foot

FRCH7E10.EPS

13. **Move the machine on the carrier pallet until the machine disengages from the machine retainers. Then raise the adjustable feet on the front of the machine to the uppermost position.**

⚠ CAUTION

Be sure to raise the adjustable feet to the uppermost position. If the machine is moved with the adjustable feet lowered, they might get caught on the ground, causing the machine to topple down.

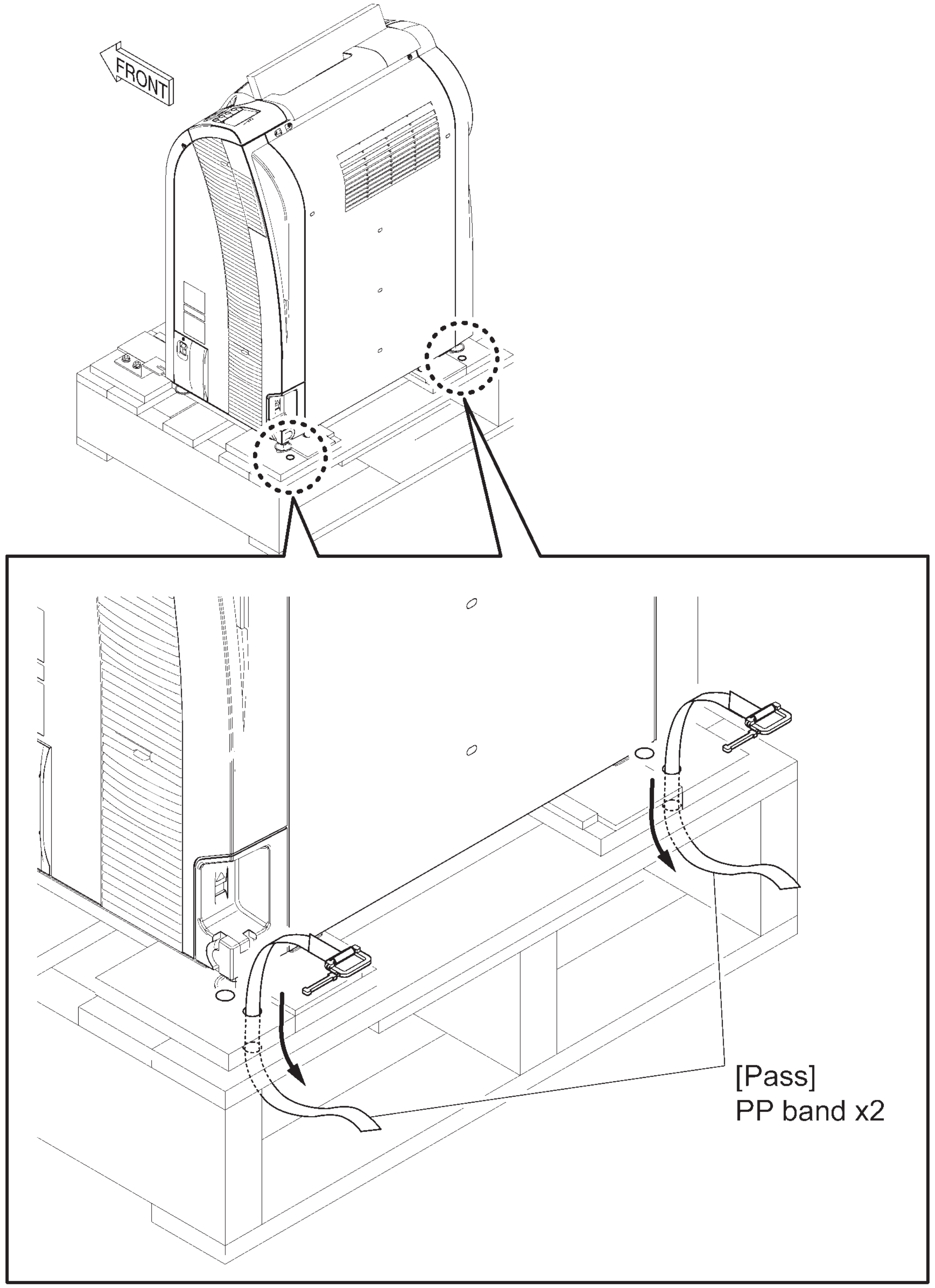


FRCH7E22.EPS

14. **Remove the PP bands for retaining the slope from the accessory bags, and pass the PP bands through the holes on the carrier pallet.**

◆ NOTE ◆

Make sure that the rubber plate has been removed, before passing the PP band. Otherwise, the adjustable foot might get caught on the rubber plate, causing the machine to topple down, when the machine is unloaded from the carrier pallet.

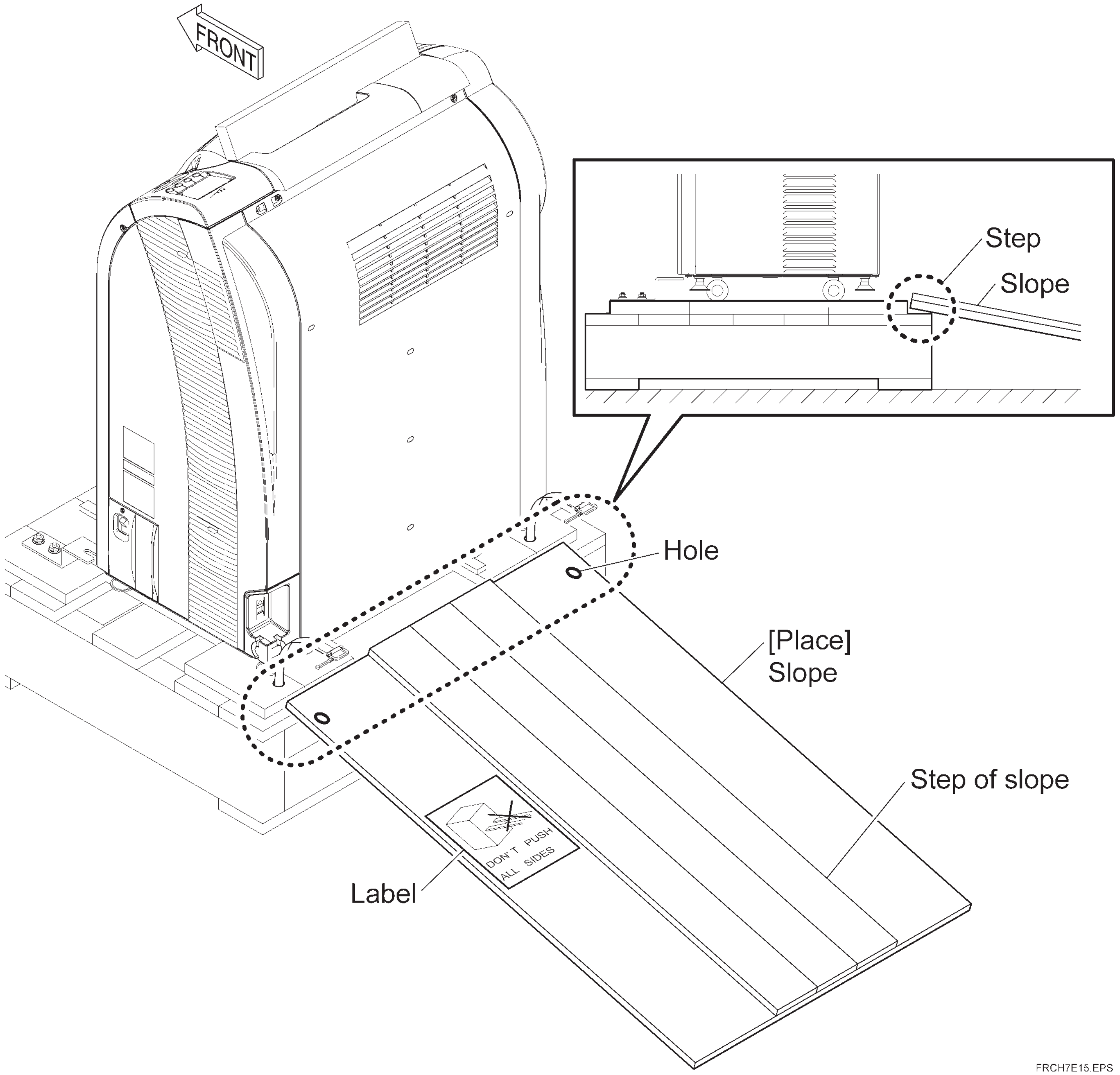


FRCH7E12.EPS

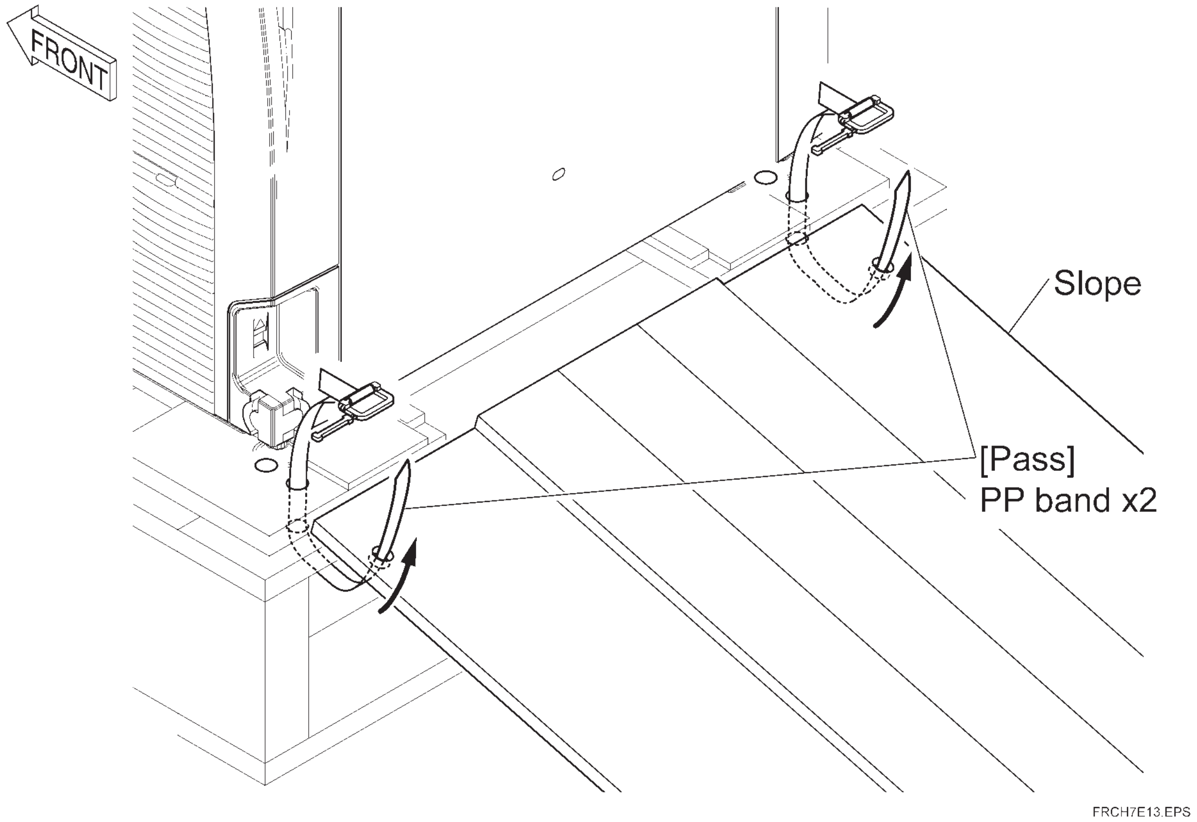
15. **Place the slope over the step of the carrier pallet.**

◆ NOTES ◆

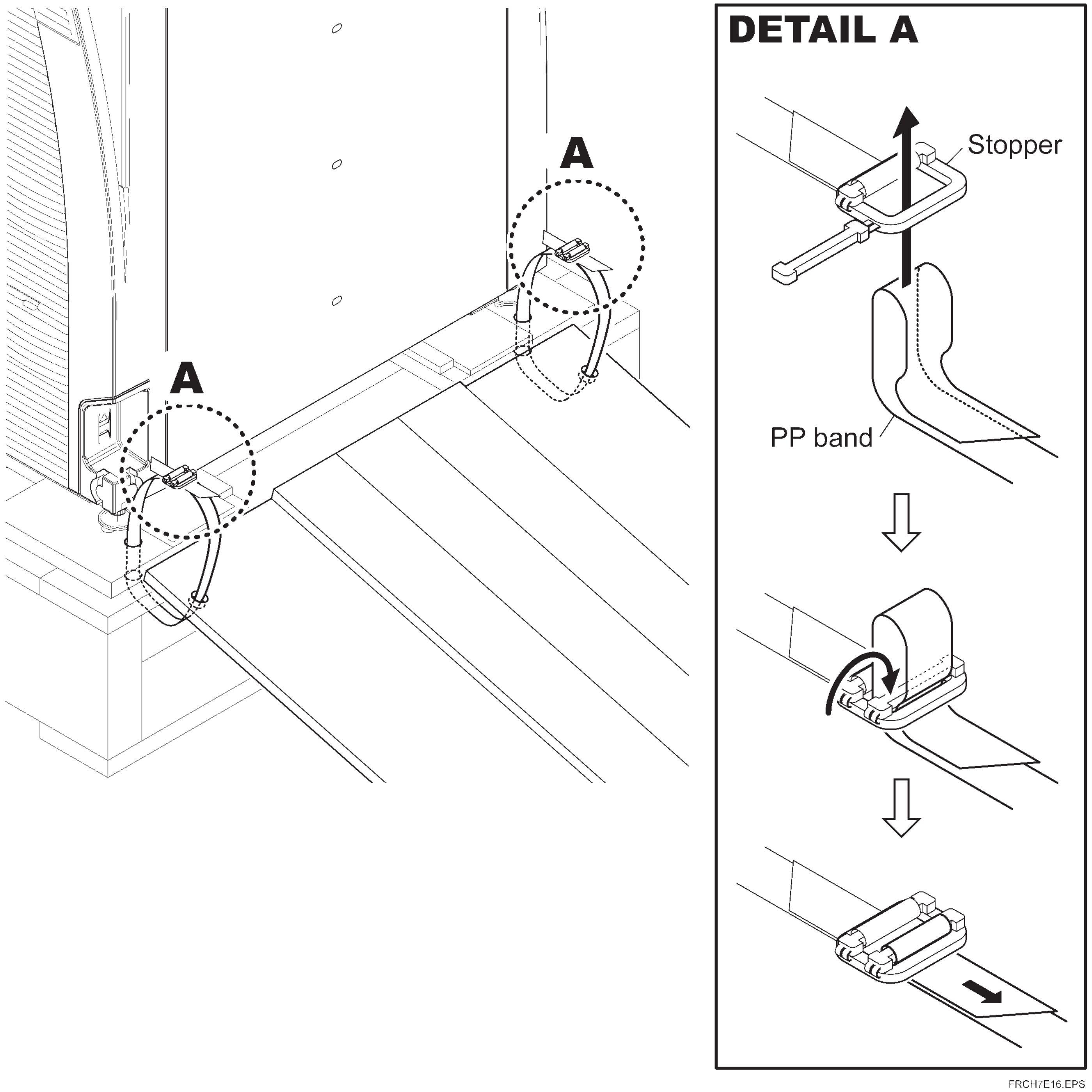
- *Place the slope with the surface having the label applied facing upward. Since the step of the slope serves as a guide for casters, if a wrong face is placed, a difference in levels will occur between the carrier pallet and the slope, and in addition, the casters might come off from the slope when the machine is unloaded.*
- *Place the slope with the side with holes toward the carrier pallet.*


FRONT
Step
Slope
Hole
[Place]
Slope
Step of slope
Label
DON'T PUSH
ALL SIDES
FRCH7E15.EPS

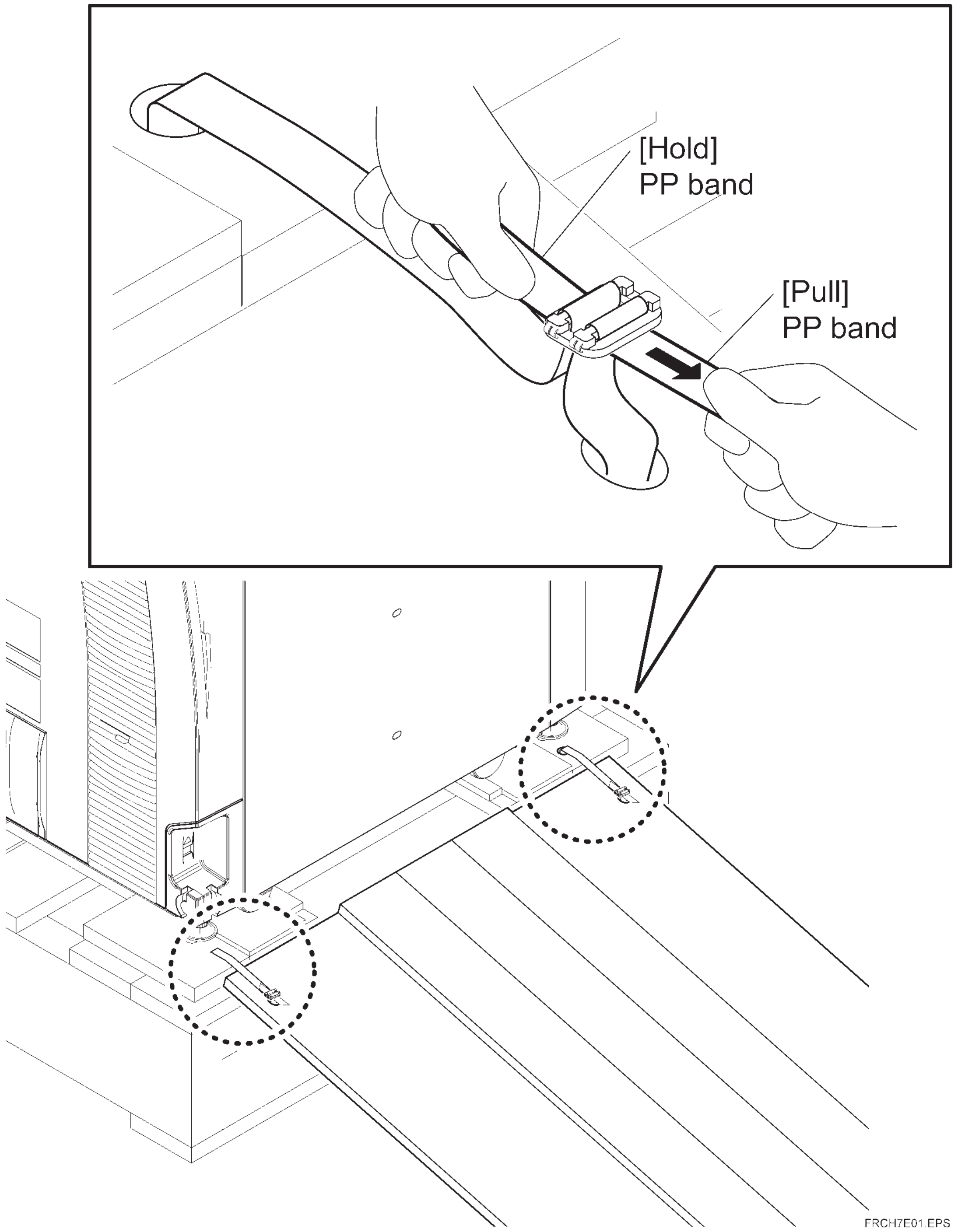
16. **Pass the PP bands through the holes of the slope.**


FRONT
Slope
[Pass]
PP band x2
FRCH7E13.EPS

17. **Put the PP band on the stopper.**


A
A
DETAIL A
Stopper
PP band
FRCH7E16.EPS

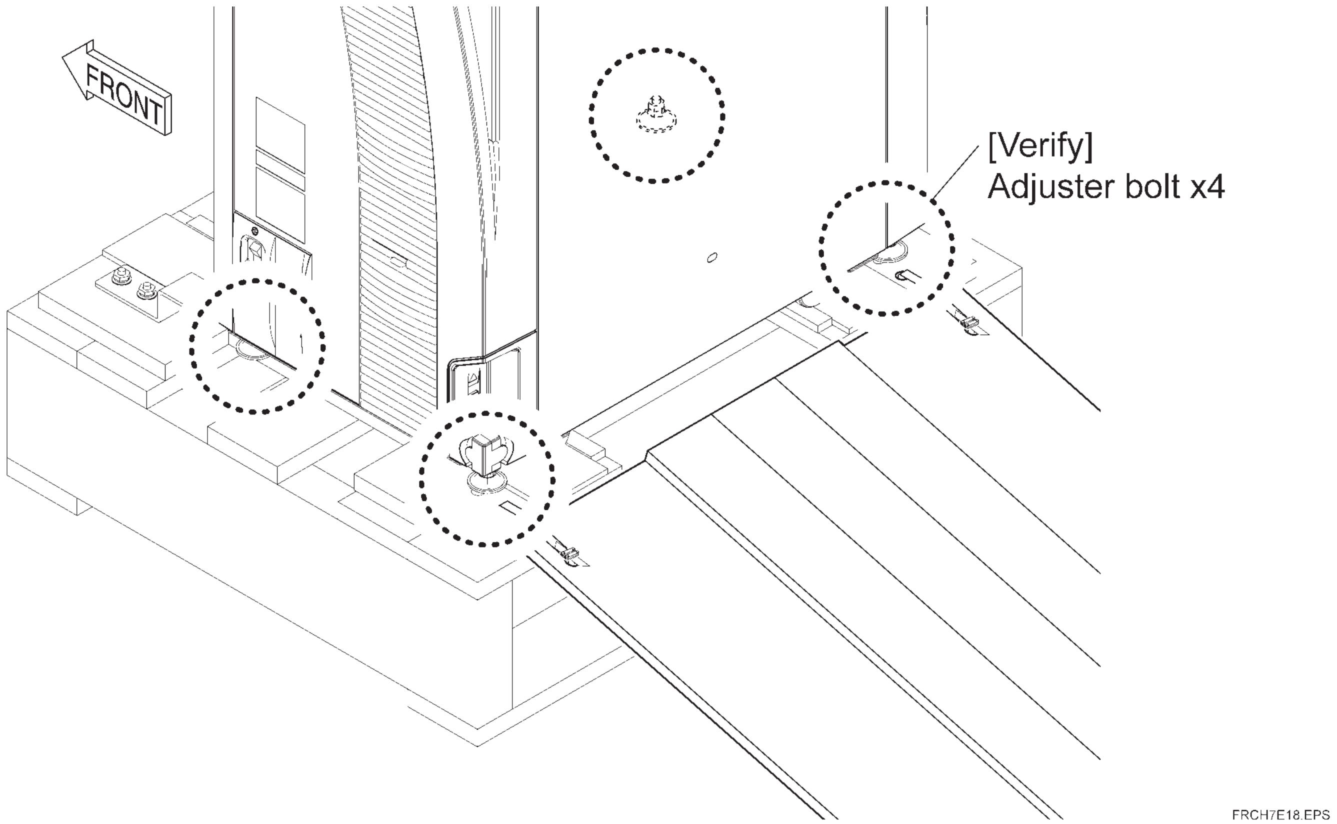
18. **Tighten the PP band, and fix the slope to the carrier pallet.**


[Hold]
PP band
[Pull]
PP band
FRCH7E01.EPS

19. Check to make sure that the four adjustable feet are raised to the uppermost position, before unloading the machine from the carrier pallet.

⚠ CAUTION

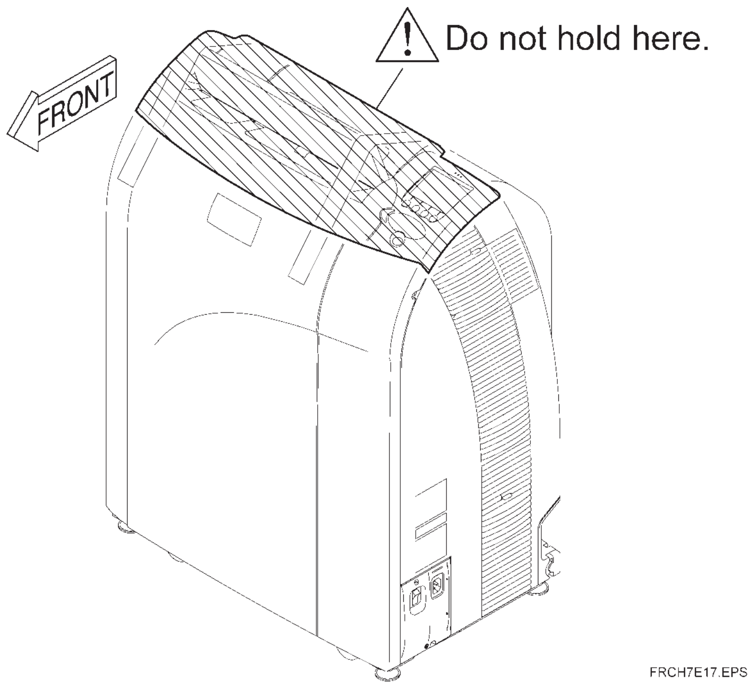
If the machine is moved with the adjustable feet lowered, the feet might get caught with the carrier pallet, the slope and the ground, causing the damage on the adjustable feet.

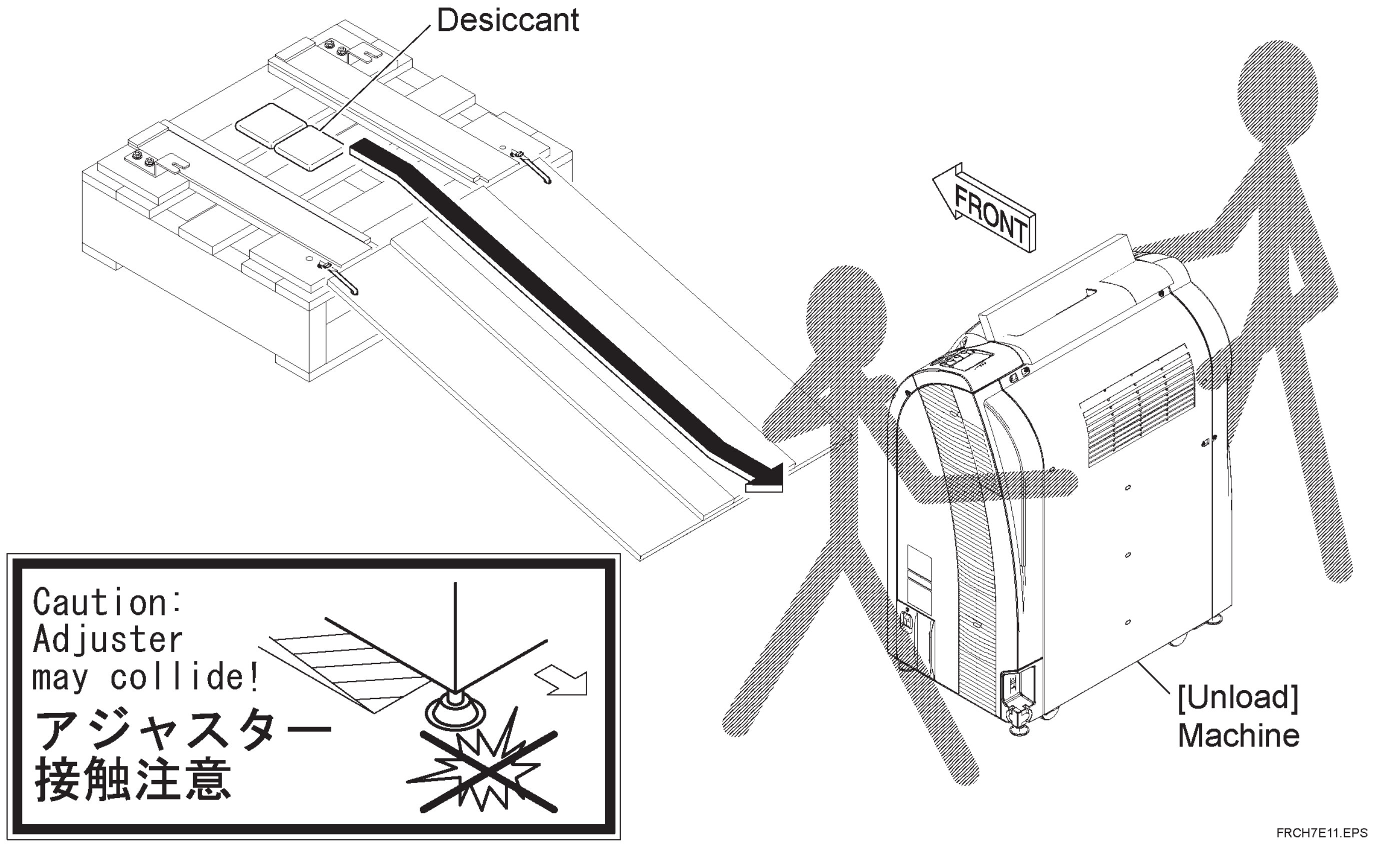

FRONT
[Verify]
Adjuster bolt x4
FRCH7E18.EPS

20. Unload the machine from the carrier pallet.

⚠ CAUTIONS

- ***Be sure to unload the machine with two persons, and support the machine from both side faces of the machine.***
- ***Hold the rear and the side faces of the machine when supporting the machine.***
- ***Do not hold in the vicinity of the cassette inserting entrance or the vicinity of the operation panel.***


Do not hold here.
FRONT
FRCH7E17.EPS


Desiccant
FRONT
[Unload]
Machine
Caution:
Adjuster
may collide!
アジャスター
接触注意
FRCH7E11.EPS

3.3 Transfer

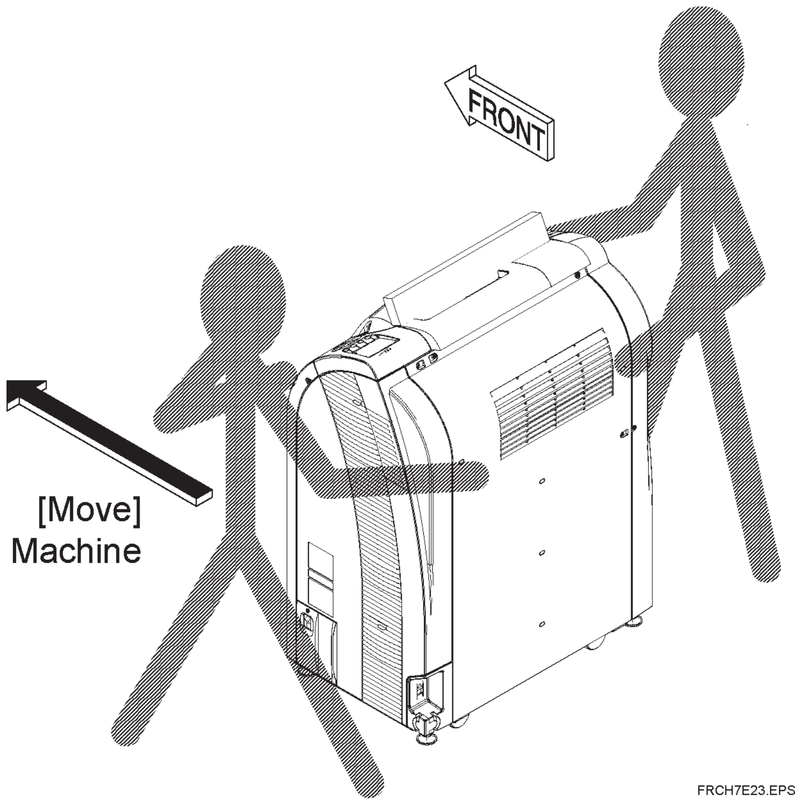
⚠ CAUTIONS

- *When transferring the machine, two persons should support the machine from both side faces to prevent the machine from toppling down.*
- *Raise the adjustable feet to the uppermost position before transfer. Otherwise, the machine might topple or the casters might get damaged.*
- *When the machine should be moved over some step or bump, move it as slowly as possible to avoid shock to it. Note that the step over which the machine may move is about 10 mm high at most.*

1. Put the hand lifter underneath the machine.

◆ NOTE ◆

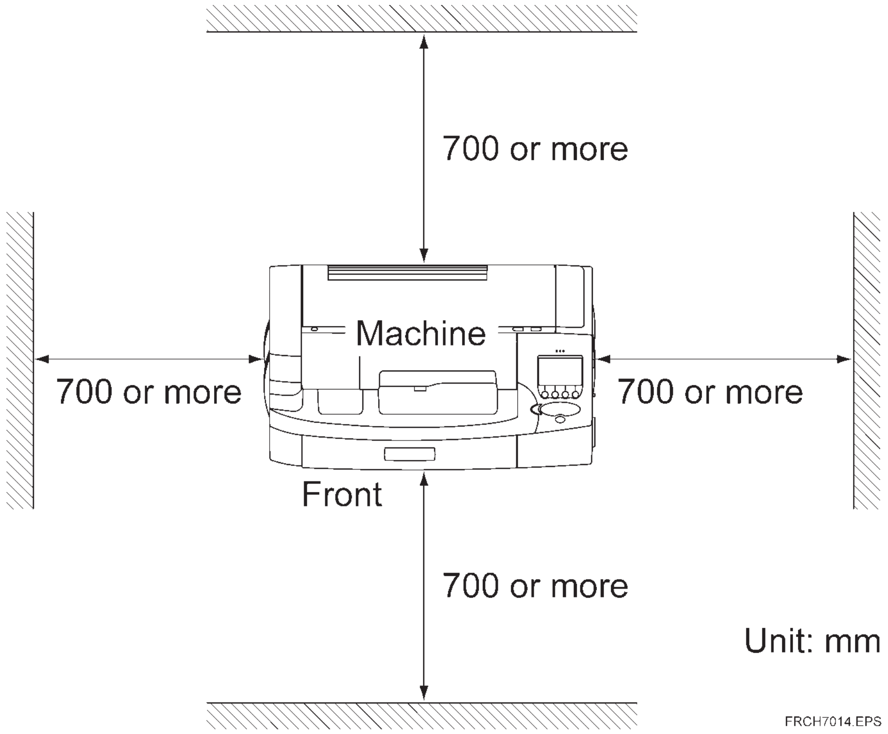
Do not use the hand lifter to transfer the machine into the installation place. The machine might topple and get damaged.



FRCH7E23.EPS

3.4 Temporary Placement

1. Secure space required for installation procedures and temporarily place the machine.



FRCH7014.EPS

2. Secure the machine with the adjustable feet in place.

3.5 Checking the Items Supplied

Check whether all the items are supplied in accordance with the PACKING LIST that is contained in each carton.

■ Machine Main Body

Abbreviated product name	Description	Qty.	Remarks
CR IR 357 RU USA 1 E	Image reader main body CR-IR 357 (for the U.S.)	1	- For FMSU direct selling - For use at hospitals - For inch type cassettes
CR IR 357 RU E	Image reader main body CR-IR 357 (For European and other foreign countries)	1	- For use at hospitals - For metric type cassettes

■ Power Cable

Check Item	Qty.	Remarks
Power cable	1	136N0418 (CCC: For China)
		136N0377 (CEE: For Europe (except the U.K.))
		136N0376 (BSI: For the U.K.)
		- 136N0427 (US1: For the U.S.) - Packed together with the accessories.

■ Accessories

Check Item	Qty.	Remarks
CD-R (machine-specific data)	1	Machine-specific data CD-R
CD-ROM (application)	1	For installation
Fuse set	1	1.0A (137S1178)
	1	1.6A (137S1276)
	1	2.0A (137S1277)
	1	3.2A (137S1278)
	1	5.0A (137S1280)
Label	2	Cassette insertion operation label
	1	Exposure markers precaution label
Spur gear	1	327N1122501
	1	327N1121608
Screw	5	TP3x6
	5	BR4x8
	5	DT3x6
KL ring	5	KL4
Cover	1	For power supply inlet
Test Result Sheet	1	
Instruction Manual	1	
Letter of guarantee	1	

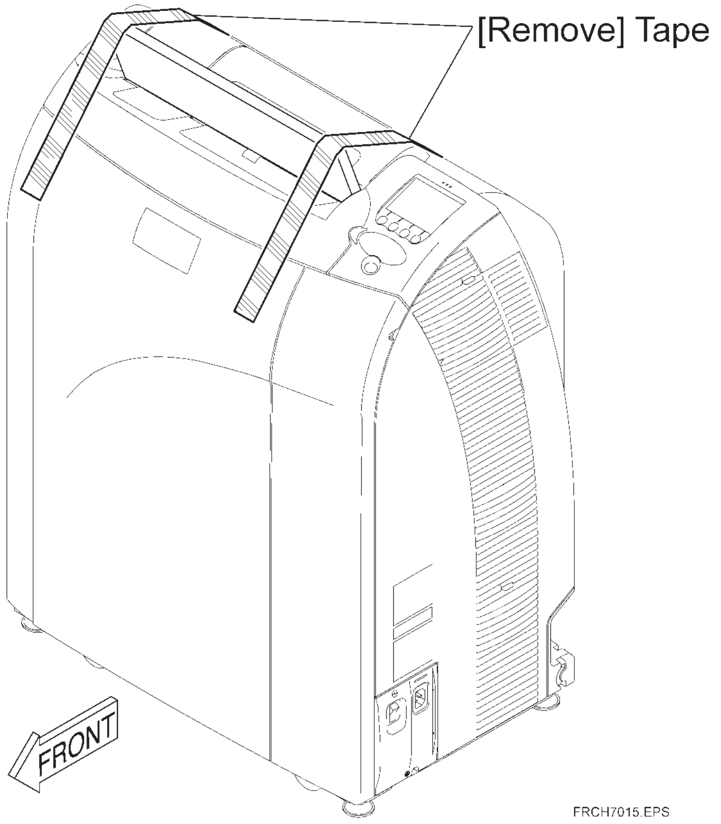
■ Optional Items

Abbreviated product name	Description	Qty	Remarks
IR 355 FLOOR FIX KIT #(E)	Anti-topple retainer kit	1	For retaining the machine
IR 355 STAND #(E)	Supporter	1	
IR 355 CASSETTE RACK #(E)	Cassette rack	1	
-	Supporter cassette rack	1	
-	Supporter cassette rack (for long cassette)	1	

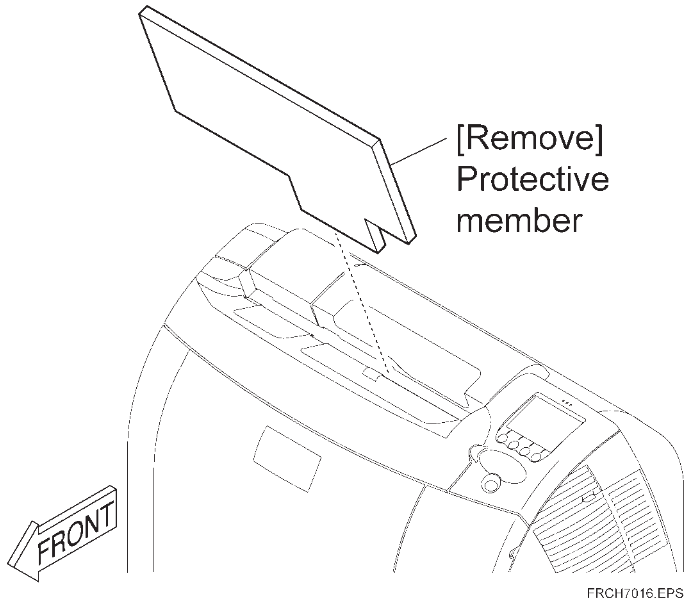
4. Installation Procedures

4.1 Removing the Transportation Protective Member

1. **Remove the tapes.**


[Remove] Tape
FRONT
FRCH7015.EPS

2. **Remove the protective member.**


[Remove]
Protective
member
FRONT
FRCH7016.EPS

5. Connecting the Cables

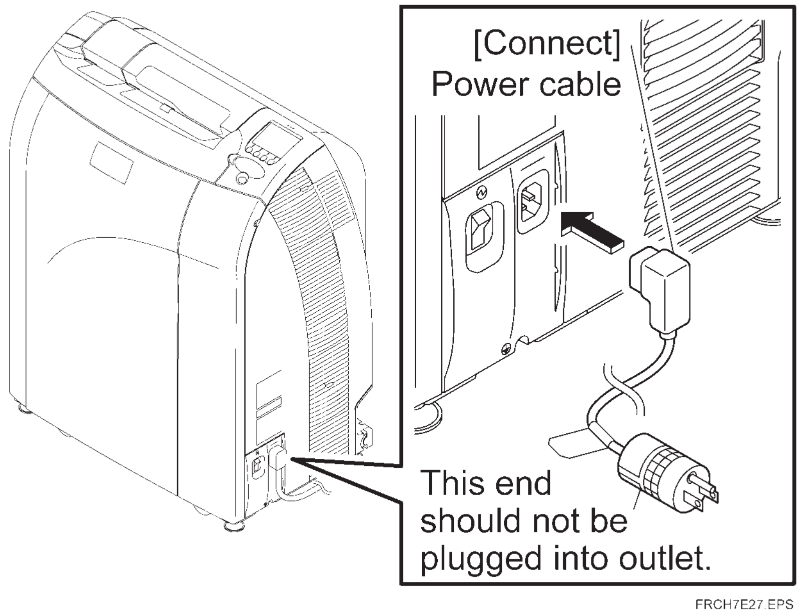
5.1 Connecting the Power Cable and Checking Resistance Value

⚠ WARNINGS

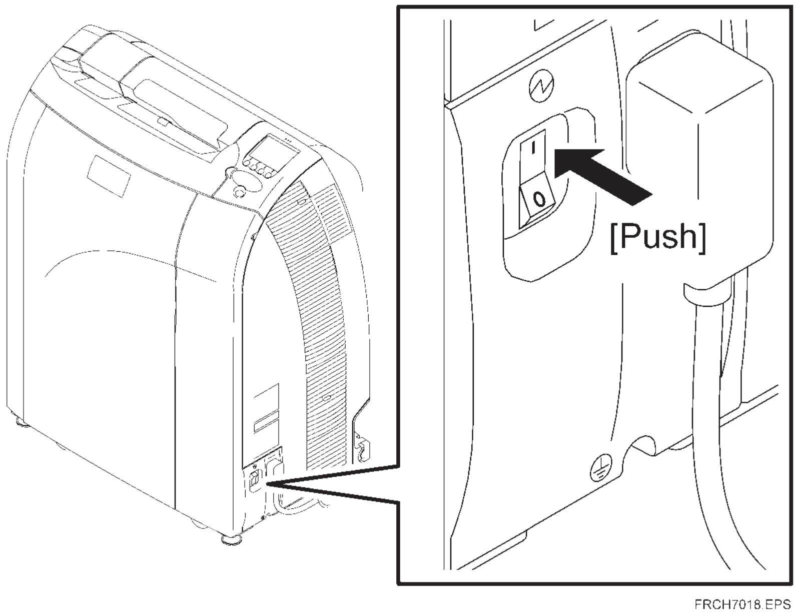
- ***Before measuring the resistance value, make sure that the power plug is unplugged from the outlet.***
- ***If the machine is to be installed in the patient environment, see "APPENDIX 1. ADDITIONAL PROTECTIVE GROUNDING."***

☞ ***{IN: Appendix 1_ADDITIONAL PROTECTIVE GROUNDING}***

1. **Connect the power cable to the machine.**


[Connect]
Power cable
This end
should not be
plugged into outlet.
FRCH7E27.EPS

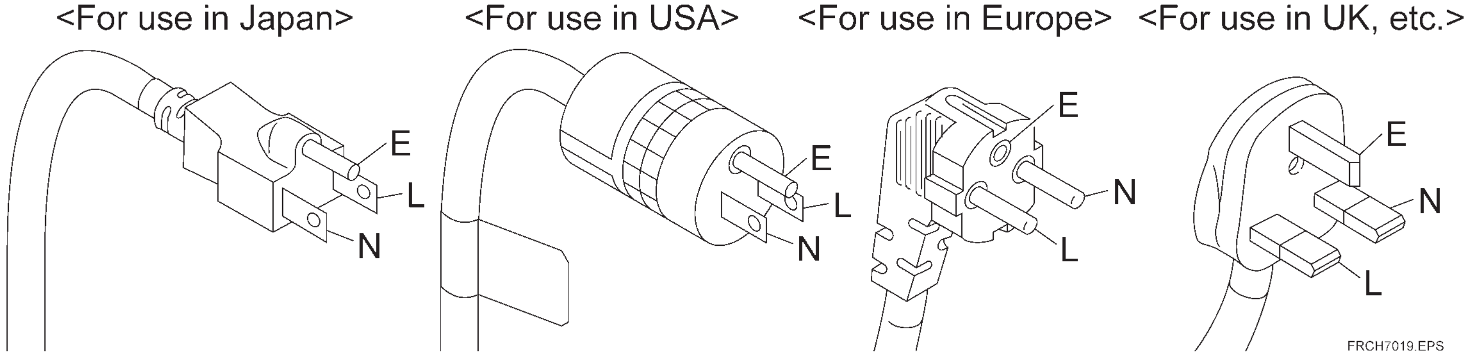
2. **Place the breaker switch in the ON position.**


[Push]
FRCH7018.EPS

3. **Measure the resistance value of the power cable.**

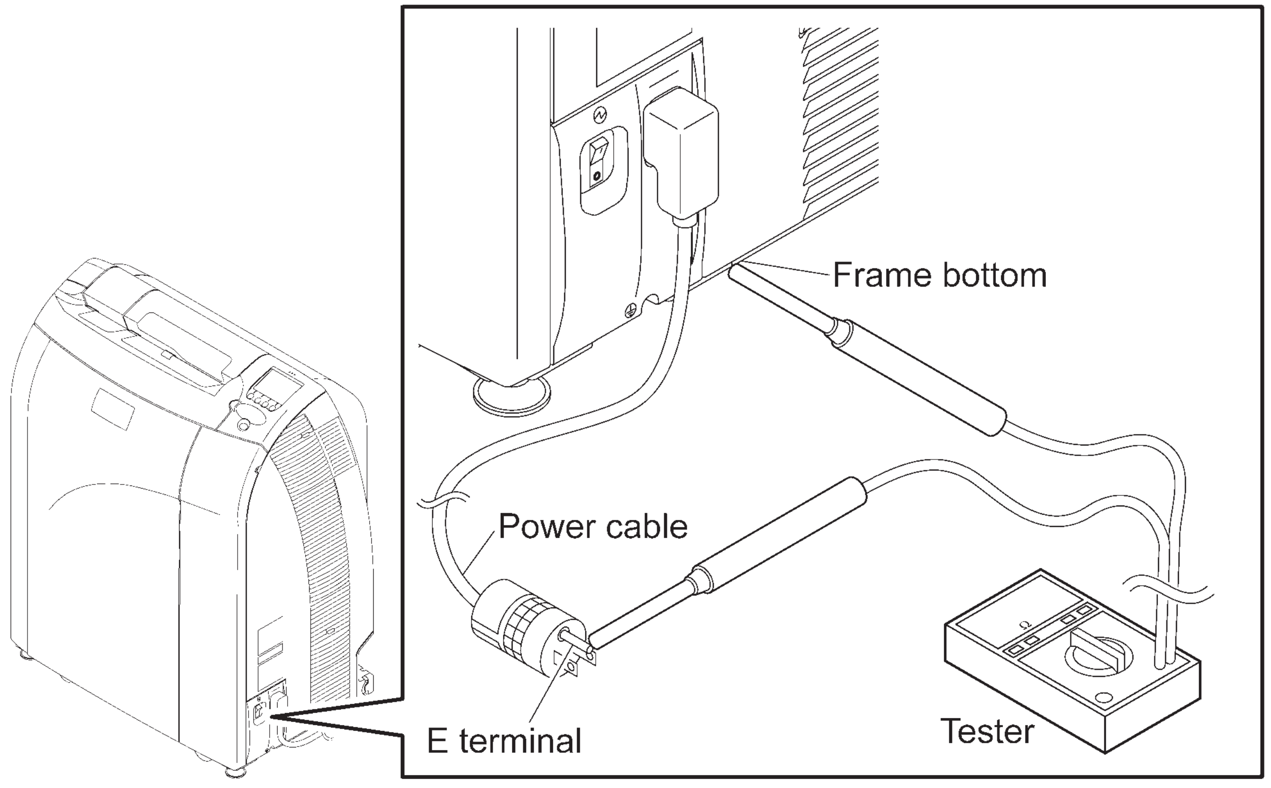
(Reference value)

Terminal	**L - N**	**L - E**	**N - E**
Resistance value	100kΩ -	∞	∞


<For use in Japan>
E
L
N
<For use in USA>
E
L
N
<For use in Europe>
E
N
L
<For use in UK, etc.>
E
N
L

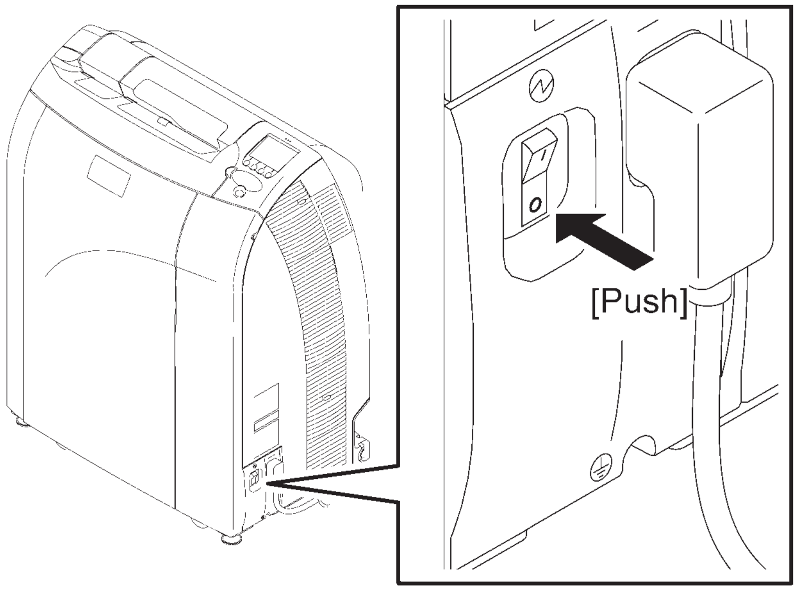
FRCH7019.EPS

4. **Measure the resistance value between the E terminal of the power cable and the bottom of the machine frame, and make sure that there is continuity.**


Frame bottom
Power cable
E terminal
Tester

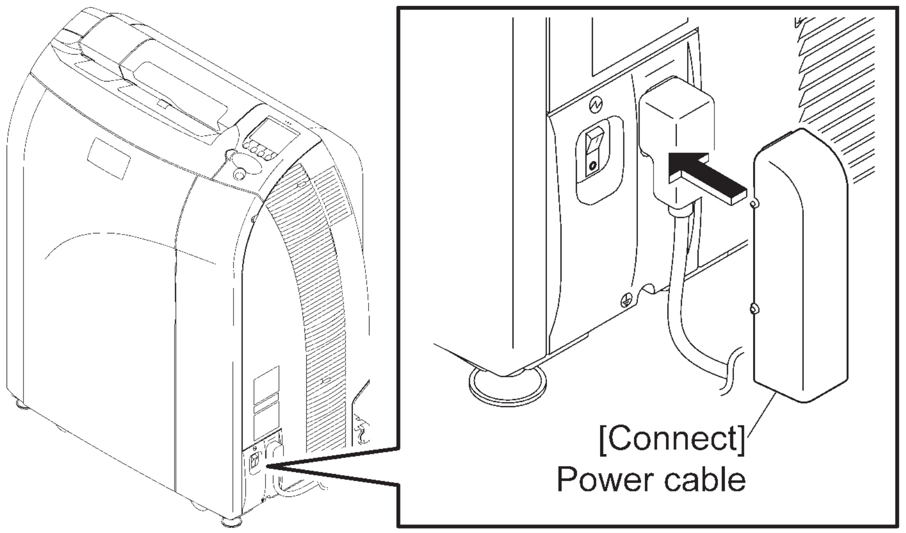
FRCH7E25.EPS

5. **Place the breaker switch in the OFF position.**



FRCH7020.EPS

6. **Install the power cable cover.**


[Connect]
Power cable

FRCH7027.EPS

5.2 Connecting the Interface Cable

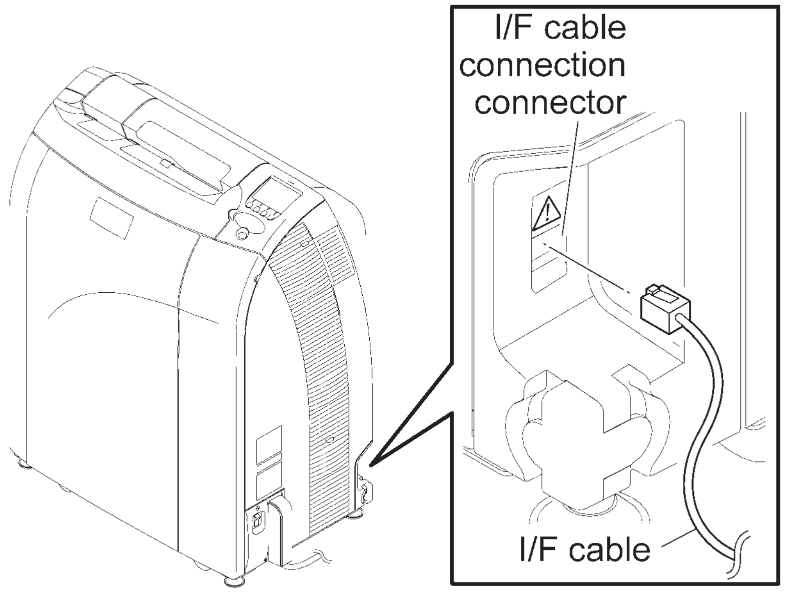
⚠ CAUTION

A telephone cable should not be plugged into the I/F cable connector. The type of cable compatible with this machine is an IEC950/UL1950-listed cable only.

◆ NOTE ◆

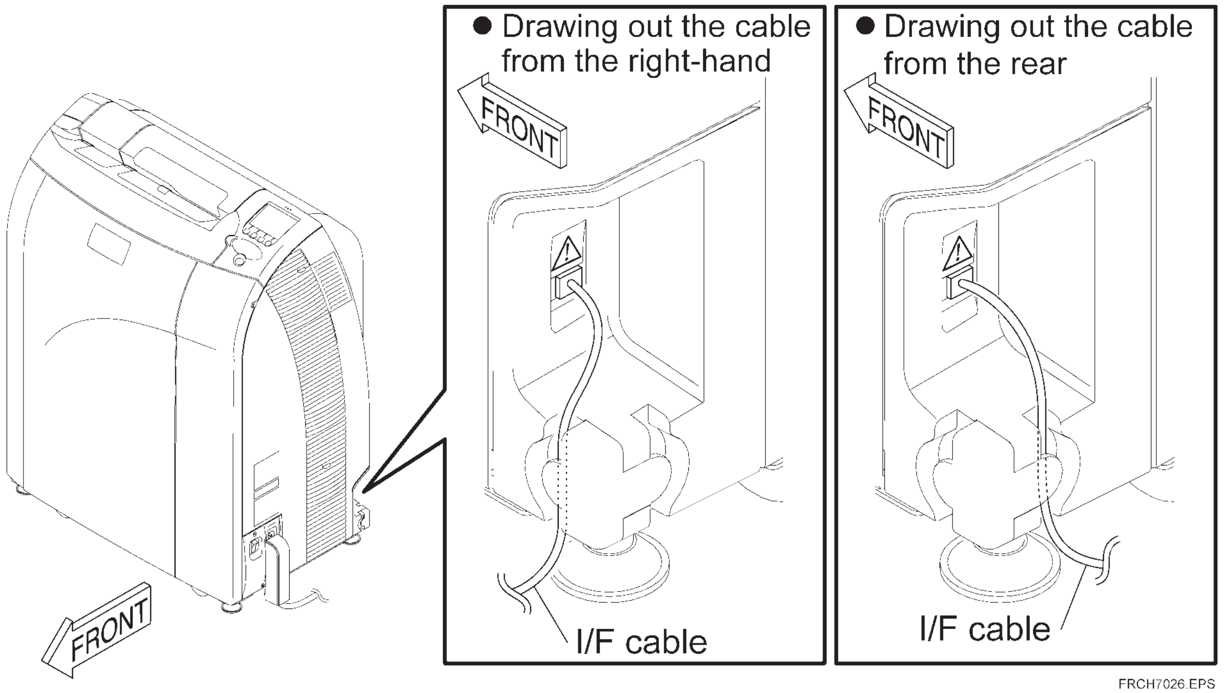
For the I/F cable, only the straight cable of UTP type should be used.

1. **Connect the I/F cable to the I/F cable connector of the machine.**


I/F cable connection connector
I/F cable

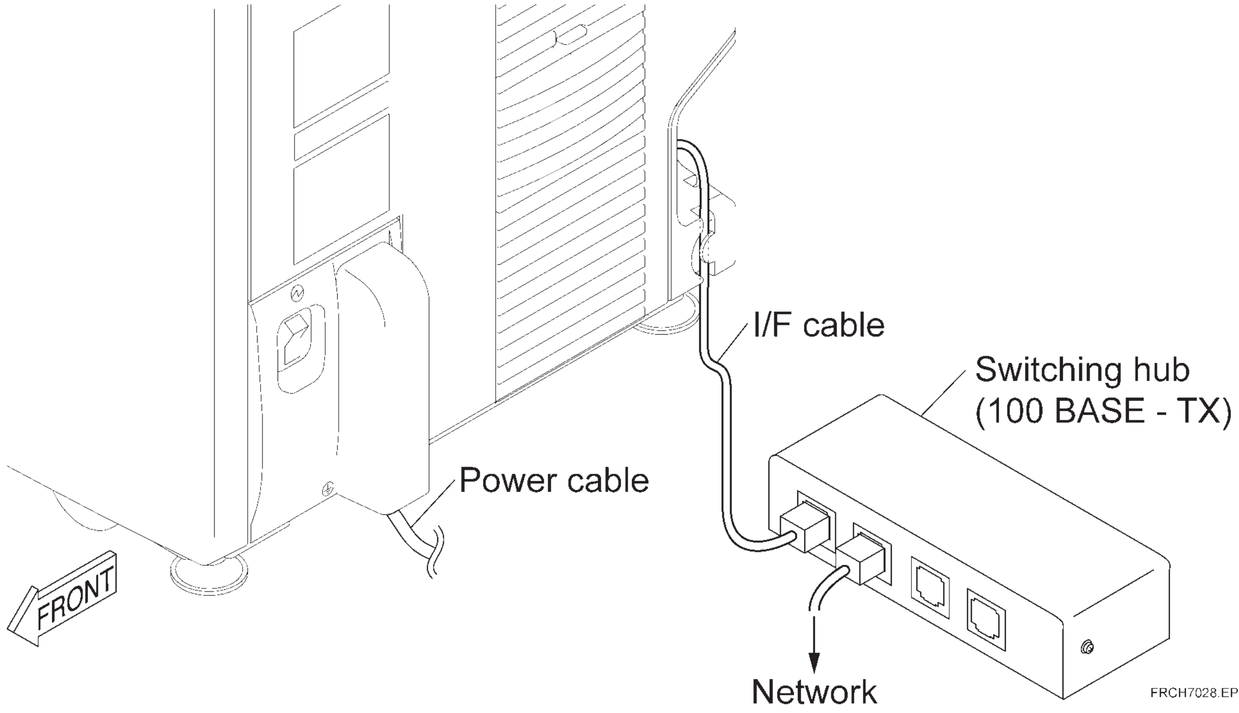
FRCH7021.EPS

2. **Consult the user to check the installation conditions of the machine, cable wiring locations and so on. When the I/F cable is to be drawn out from the right-hand side of the machine, pass the cable through the right-hand slot, and when it is to be drawn out from the rear of the machine, pass it through the rear slot.**


● Drawing out the cable from the right-hand
FRONT
I/F cable
● Drawing out the cable from the rear
FRONT
I/F cable
FRONT

FRCH7026.EPS

3. **Connect the I/F cable to the switching hub.**


I/F cable
Switching hub
(100 BASE - TX)
Power cable
FRONT
Network

FRCH7028.EPS

6. Final Placement

For final placement of the machine, check the requests of the user, and observe the procedures described below to secure the machine and cables in place.

⚠ **WARNING**

At an institution where a long cassette is used, be sure to fasten the machine to the floor with the anti-topple retainer.

☞ ***{IN: Appendix 2_Securing the Machine with the Anti-Topple Retainer}***

- **Retaining the machine with the adjustable feet;**
  When the machine is to be retained with the adjustable feet, refer to "6.1 Securing the machine".
  ☞ **{IN:6.1_Securing the Machine}**

- **Retaining the machine by the anti-topple retainer;**
  When the machine is to be fixed by the anti-topple retainer (optional), refer to "Appendix 2. Securing the Machine with the Anti-Topple Retainer".
  ☞ **{IN: Appendix 2_Securing the Machine with the Anti-Topple Retainer}**

- **Using the supporter**
  When using the supporter (optional), see "Appendix 3. Assembling and Securing the Supporter."
  ☞ **{IN: Appendix 3_Assembling and Securing the Supporter}**

6.1 Securing the Machine

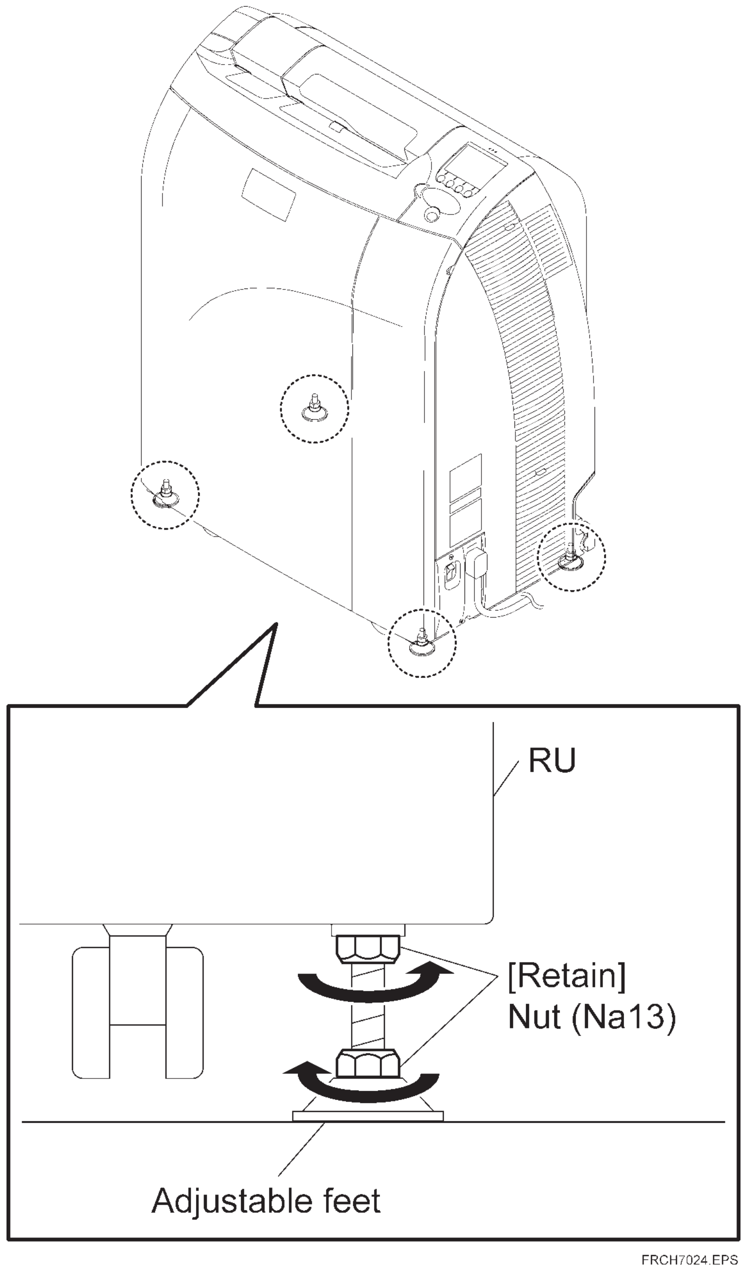
1. **Secure the four adjustable feet down onto the floor.**

◆ ***NOTE*** ◆

When securing the adjustable feet, pay attention to the following points.

- *The four adjustable feet should be evenly loaded.*
  However, if there is too little space on the right and left sides in the machine installation place to secure the adjustable feet on the rear side, the two adjustable feet on the front side should be secured in place. In this case, the two adjustable feet and two casters should be evenly loaded.
- *When the adjustable feet are secured, the casters should be detached from the floor.*

2. **Secure the adjustable feet.**



6.2 Securing the Cable

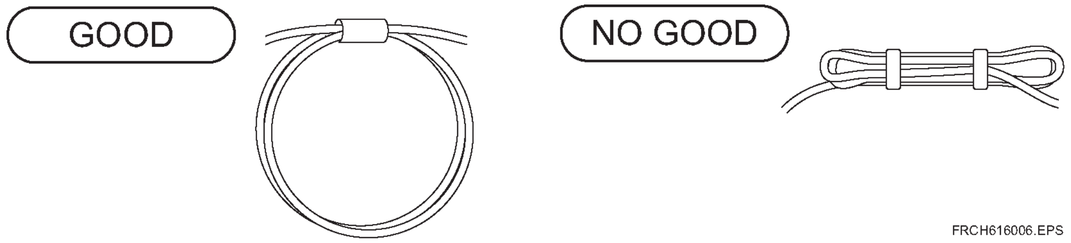
⚠ WARNING

If the machine is to be installed in the patient environment, see "APPENDIX 1. ADDITIONAL PROTECTIVE GROUNDING."

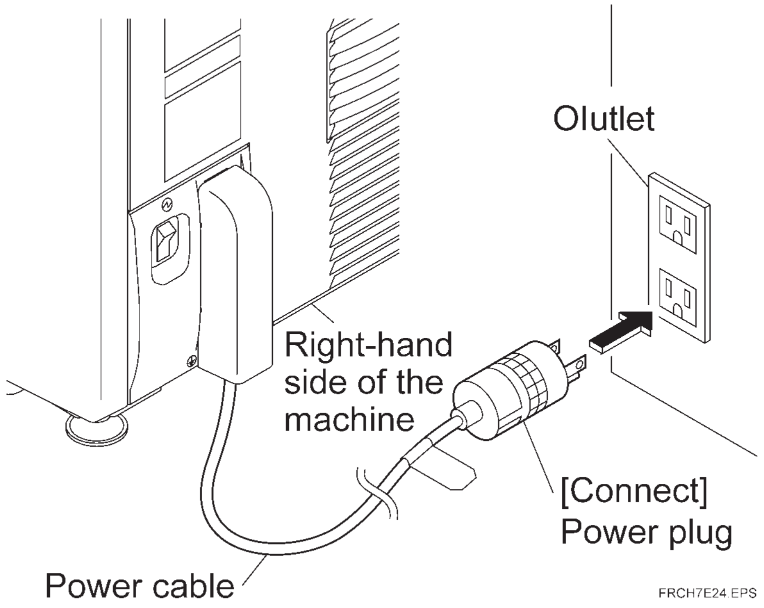
☞ ***{IN: Appendix 1_ADDITIONAL PROTECTIVE GROUNDING}***

⚠ CAUTION

Do not tie or bundle the power cable in such a manner that it is overloaded.


GOOD
NO GOOD
FRCH616006.EPS

1. **Plug the power cable into the outlet.**


Olutlet
Right-hand side of the machine
[Connect] Power plug
Power cable
FRCH7E24.EPS

7. CR Console Installation Procedures

1. **Perform the CR Console installation procedures.**

◆ NOTE ◆

Complete "7. CR Console Installation Procedures" before performing the procedures described in "8. Installing RU Software."

☞ **{FCR XG-1/CR CL Service Manual}**

8. Installing RU Software

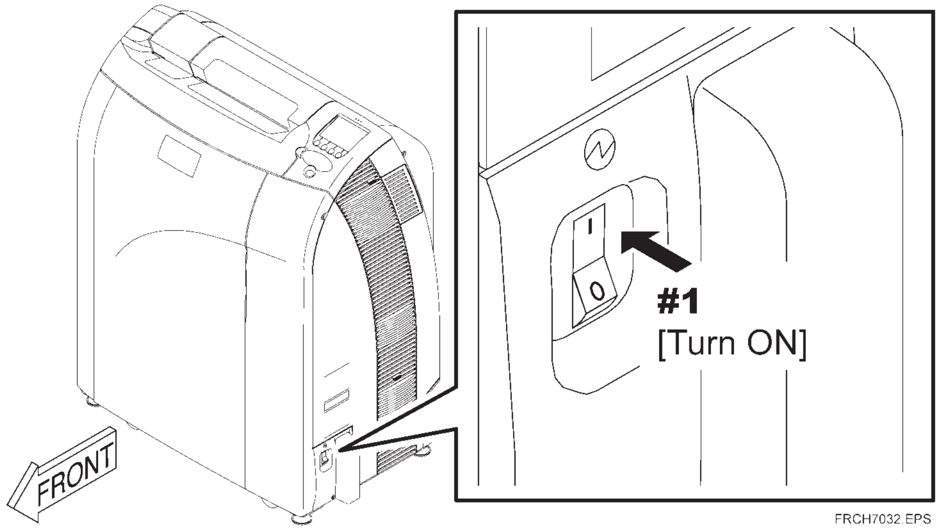
Start up the Machine Maintenance Utility of the RU and set the "RU IP Address" and "FTP Server IP Address."

The procedure described here assumes that the following addresses are to be set:

RU IP address: 172.16.1.11
FTP server IP address: 172.16.1.21

8.1 Starting the Machine Maintenance Utility

1. **Turn ON the power of the CR Console.**
2. **Turn ON the circuit breaker of the RU.**

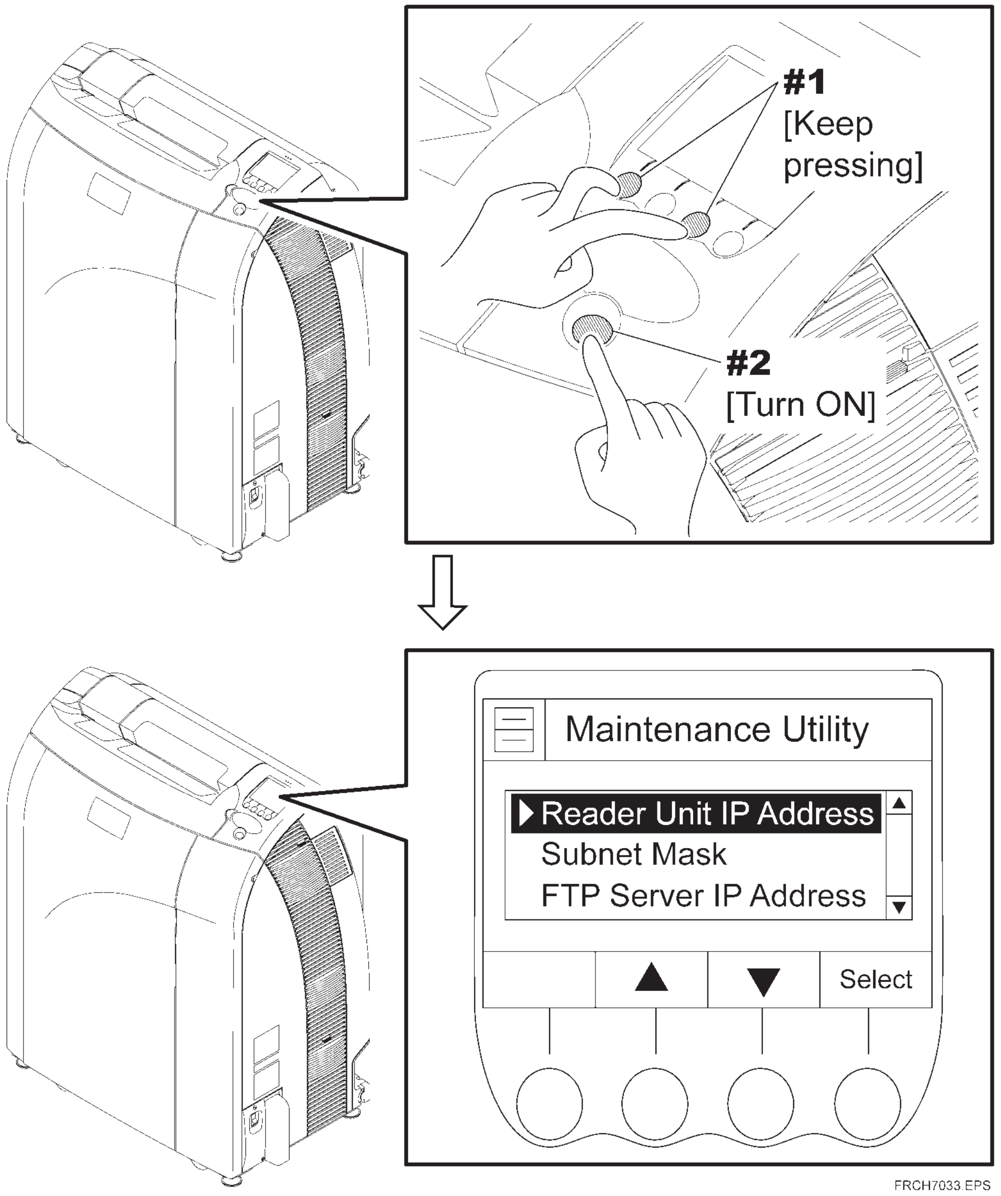

#1
[Turn ON]
FRONT
FRCH7032.EPS

3. **Start up the Machine Maintenance Utility of the RU.**

Turn ON the RU power while pressing the first and third buttons from the left on the operation panel. Keep pressing the first and third buttons from the left until the “Maintenance Utility” window appears on the operation panel.

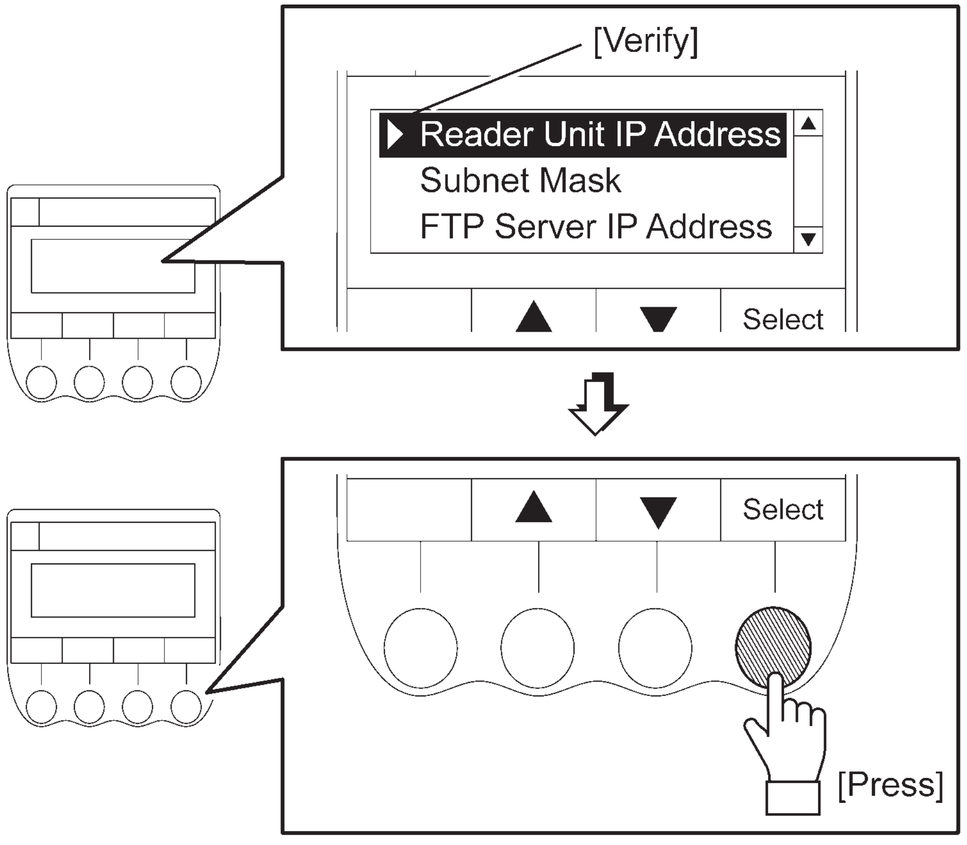
◆ **NOTE** ◆

Be sure to keep pressing the first and third buttons from the left until the “Maintenance Utility” window appears on the operation panel. If the “Maintenance Utility” window does not appear and the RU starts to boot up, once turn OFF the RU power and repeat from the procedure 1.


#1
[Keep pressing]
#2
[Turn ON]
Maintenance Utility
Reader Unit IP Address
Subnet Mask
FTP Server IP Address
▲
▼
Select
FRCH7033.EPS

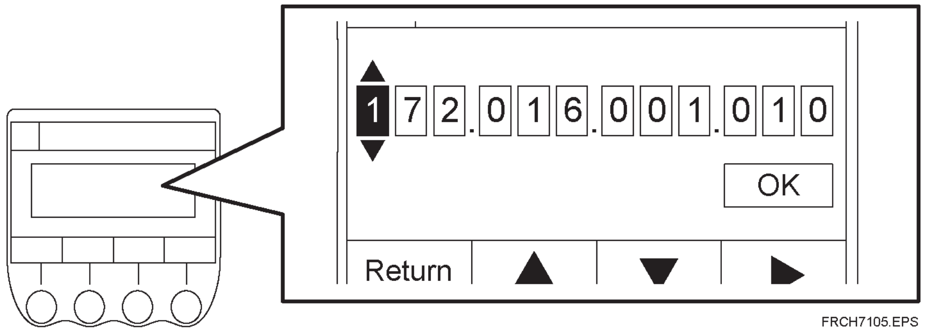
8.2 Setting the RU IP Address

1. **Make sure that “Reader Unit IP Address” is selected, and then press the [Select] button.**


[Verify]
Reader Unit IP Address
Subnet Mask
FTP Server IP Address
Select
Select
[Press]

FRCH7034.EPS

→ The address setting window appears.

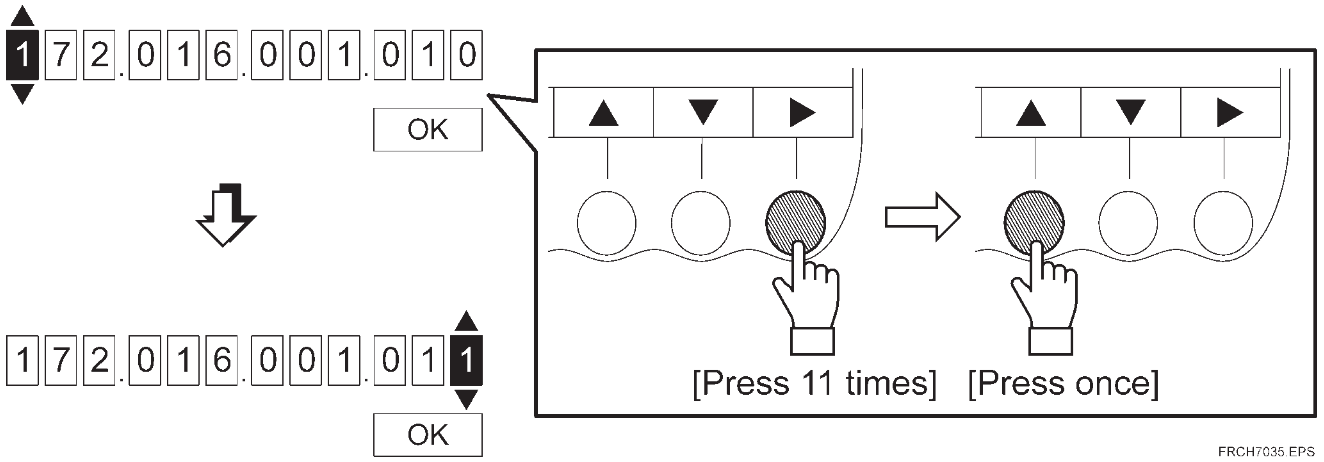

172.016.001.010
OK
Return

FRCH7105.EPS

2. **Press the ▶ button 11 times, and press the ▲ button once.**

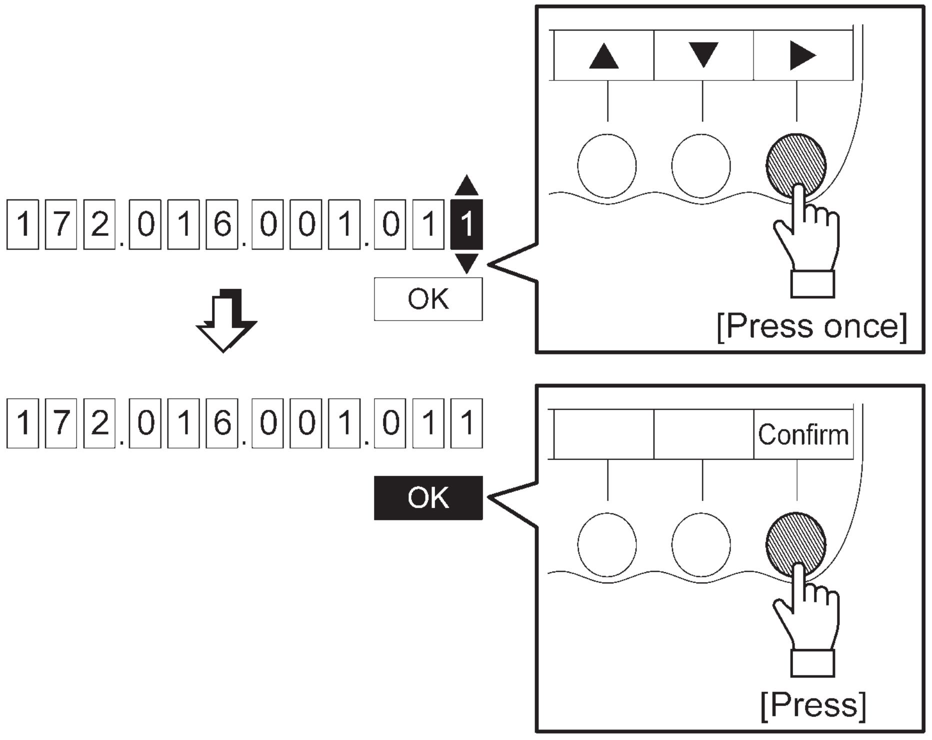
◆ ***NOTE*** ◆

Set the IP address of the RU specified on the CR Console.


172.016.001.010
OK
172.016.001.011
OK
[Press 11 times]
[Press once]

FRCH7035.EPS

3. **Press the ▶ button once to select “OK”. Then press the [Confirm] button.**

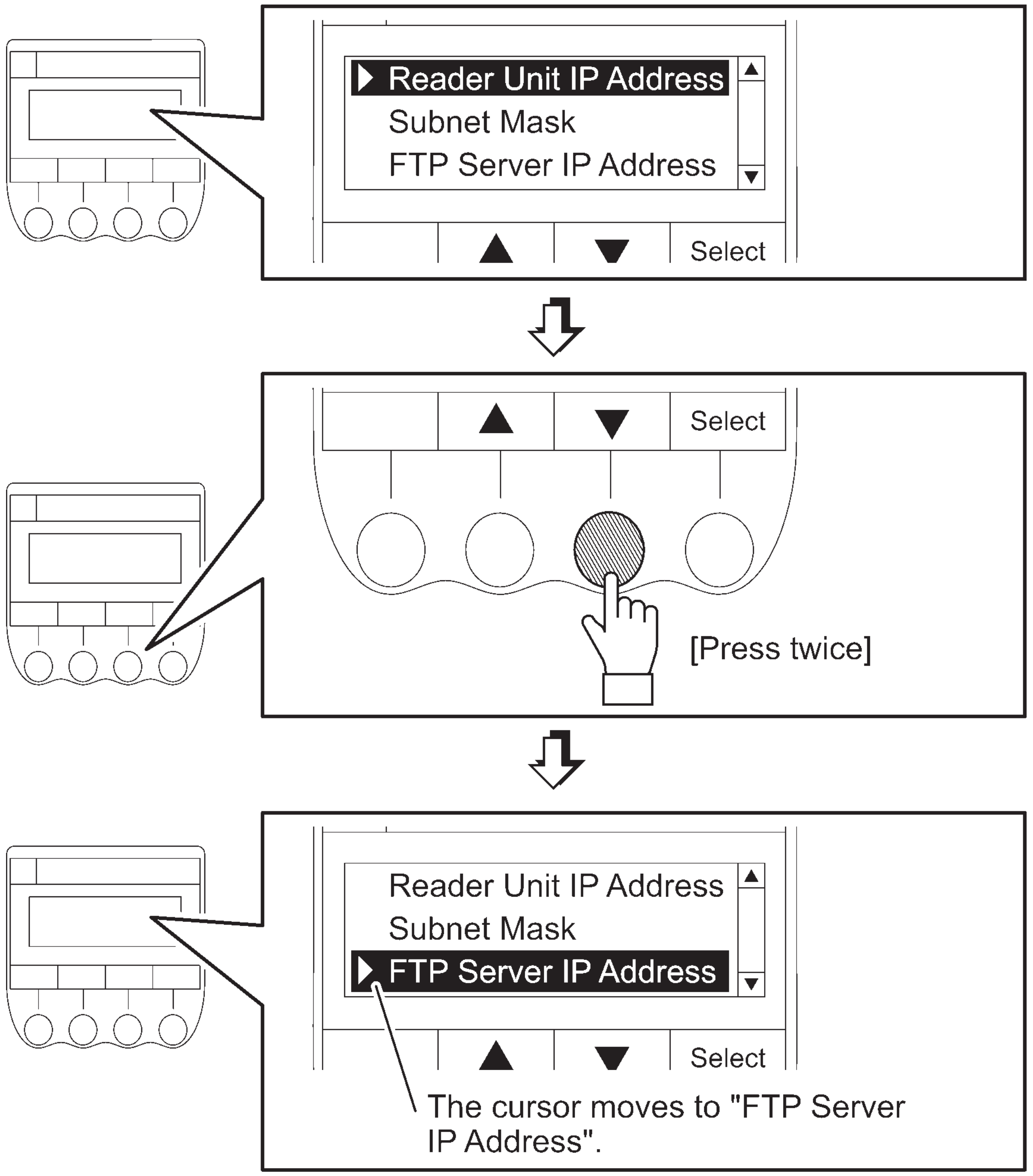

172.016.001.011
OK
[Press once]
172.016.001.011
OK
Confirm
[Press]

FRCH7036.EPS

→ In 1 to 2 seconds after the [Confirm] button is pressed, an alarm beeps. The specified address becomes effective, and the menu selection window restores.

8.3 Setting the FTP Server IP Address

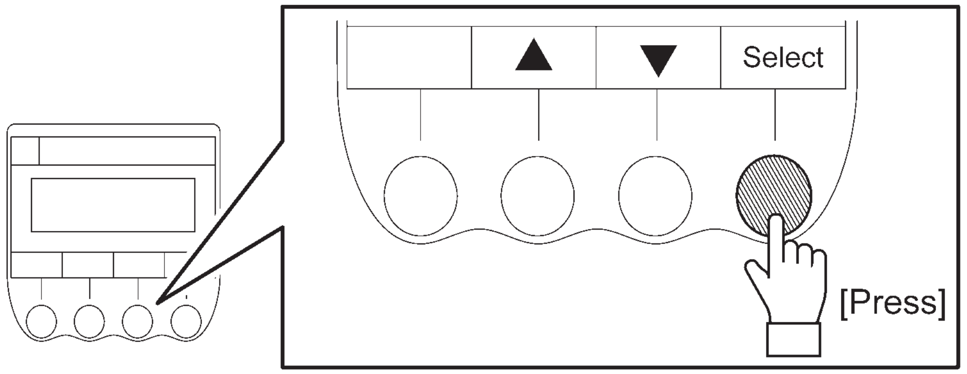
1. Press the ▼ button twice, and select “FTP Server IP Address”.


Reader Unit IP Address
Subnet Mask
FTP Server IP Address
▲
▼
Select
[Press twice]

The cursor moves to "FTP Server IP Address".

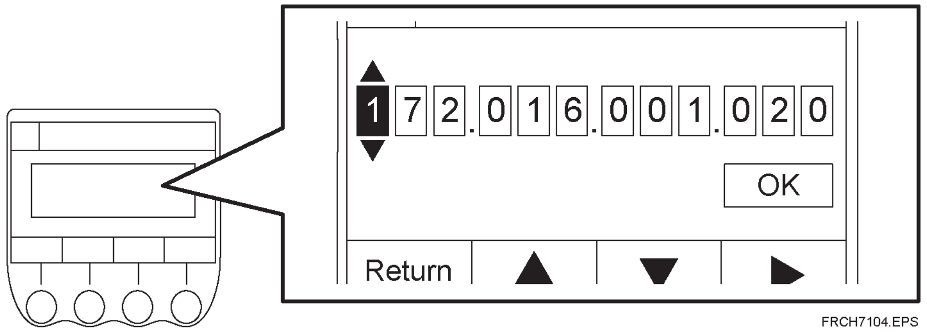
FRCH7037.EPS

2. Press the [Select] button.


▲
▼
Select
[Press]

FRCH7103.EPS

→ The address setting window appears.

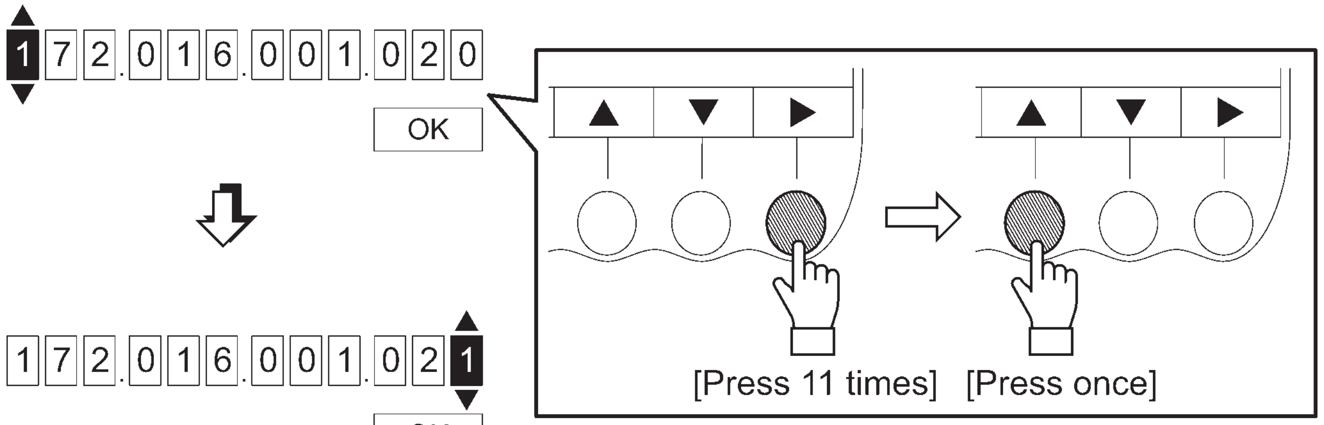

172.016.001.020
OK
Return
▲
▼
▶

FRCH7104.EPS

3. **Press the ▶ button 11 times, and press the ▲ button once.**

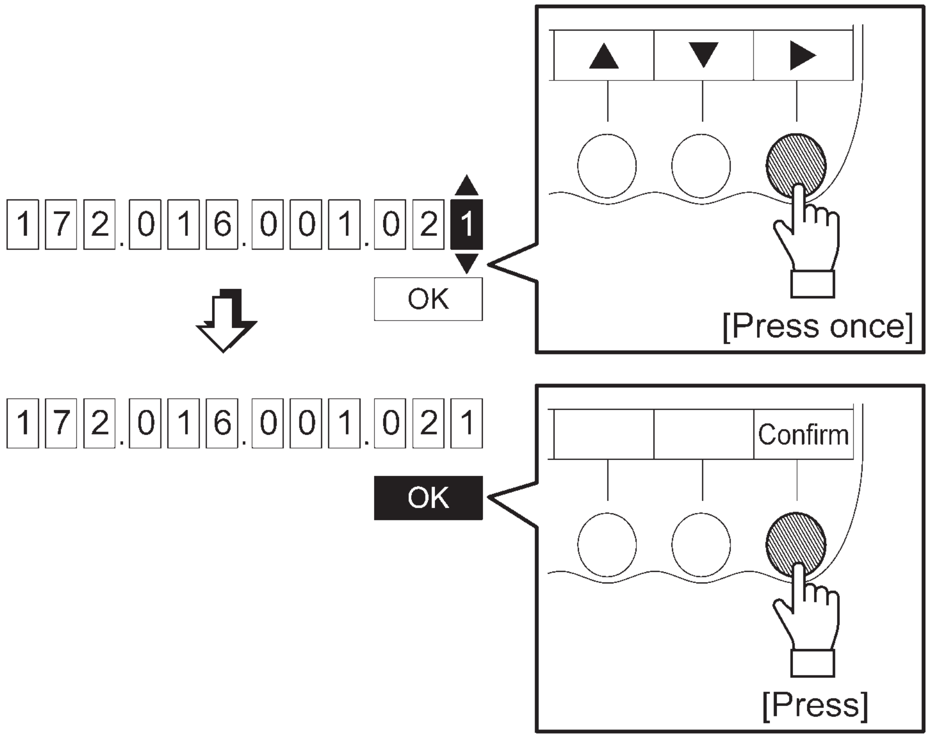
◆ *NOTE* ◆

Specify the IP address of the CR Console.


1 7 2 . 0 1 6 . 0 0 1 . 0 2 0
OK
1 7 2 . 0 1 6 . 0 0 1 . 0 2 1
OK
▲ ▼ ▶
[Press 11 times]
[Press once]

FRCH7038.EPS

4. **Press the ▶ button once to select “OK”. Then press the [Confirm] button.**


1 7 2 . 0 1 6 . 0 0 1 . 0 2 1
OK
▲ ▼ ▶
[Press once]
1 7 2 . 0 1 6 . 0 0 1 . 0 2 1
OK
Confirm
[Press]

FRCH7039.EPS

→ In 1 to 2 seconds after the [Confirm] button is pressed, an alarm beeps. The specified address becomes effective, and the menu selection window restores.

5. **Confirm the network specifications of the user’s site, and set the following addresses when needed.**

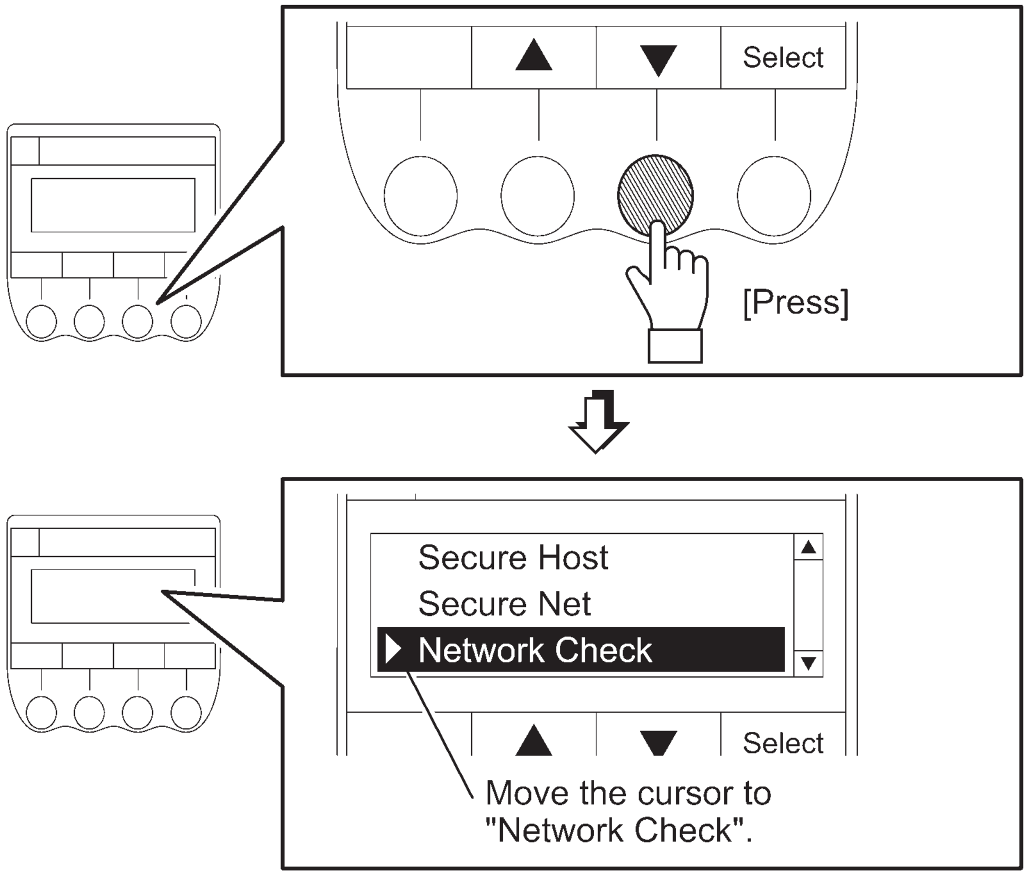
◆ *NOTE* ◆

Set the addresses by performing the individual setup procedures set forth in the Maintenance Utility volume.

- *For SubnetMask setup*
  ☞ ***{MU:3.3_SubnetMask}***
- *For Default Gateway setup*
  ☞ ***{MU:3.5_Default Gateway}***
- *For Secure Host setup*
  ☞ ***{MU:3.6_Secure Host}***
- *For Secure Net setup*
  ☞ ***{MU:3.7_Secure Net}***

8.4 Checking the Connection with the CR Console

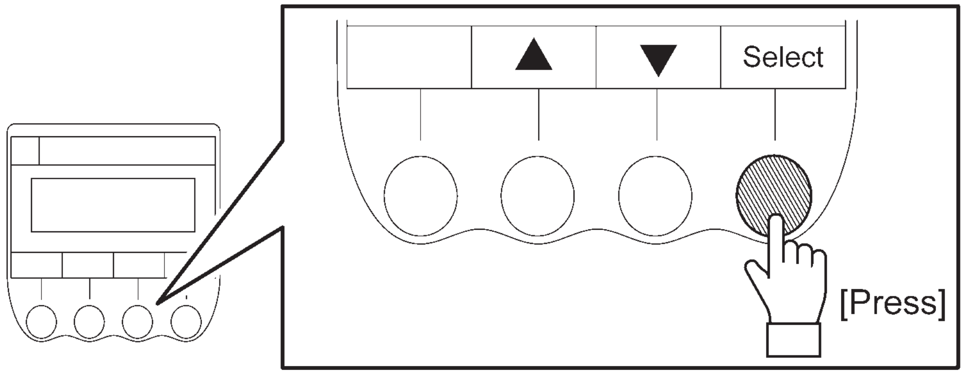
1. Press the ▼ button, and select “Network Check”.


▲
▼
Select
[Press]
Secure Host
Secure Net
Network Check

Move the cursor to "Network Check".

FRCH7040.EPS

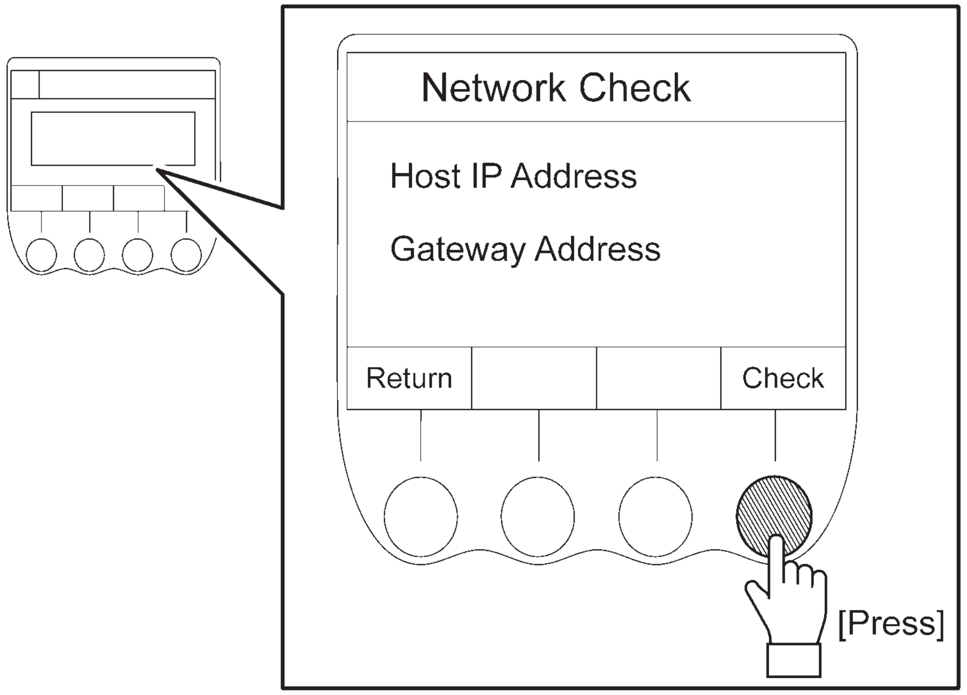
2. Press the [Select] button.


▲
▼
Select
[Press]

FRCH7103.EPS

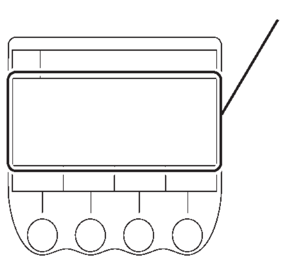
→ The “Network Check” window appears.

3. Press the [Check] button.


Network Check
Host IP Address
Gateway Address
Return
Check
[Press]

FRCH7078.EPS

4. Confirm the display on the operation panel.



● GOOD indication

Host IP Address	OK
Gateway Address	No in Use

● NO GOOD indication
"Error" appears in either line.

Host IP Address	Error
Gateway Address	Error

FRCH7041.EPS

◆ ***NOTES*** ◆

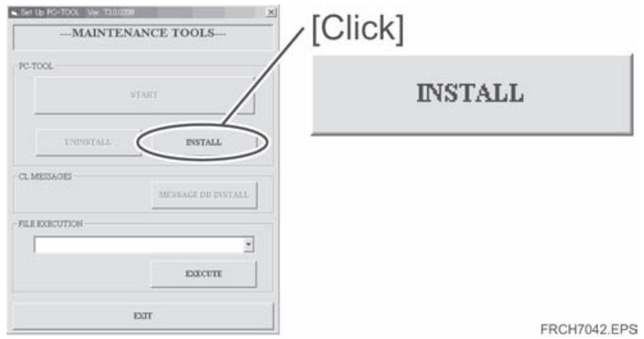
- *“OK” is displayed in the GOOD indication when “Default Gateway” is specified.*
- *Take the troubleshooting procedures when the NO GOOD indication appears.*
  ☞ ***{Troubleshooting}***

8.5 Installing the RU PC-TOOL

1. **Insert the RU-APL CD-ROM into the CD-ROM drive of the CR console.**

→ The “Set Up PC-TOOL” window automatically appears.

2. **Click on [INSTALL].**


Set Up PC-TOOL
---MAINTENANCE TOOLS---
PC-TOOL
START
UNINSTALL
INSTALL
CL MESSAGES
MESSAGE DB INSTALL
FILE EXECUTION
EXECUTE
EXIT
[Click]
INSTALL

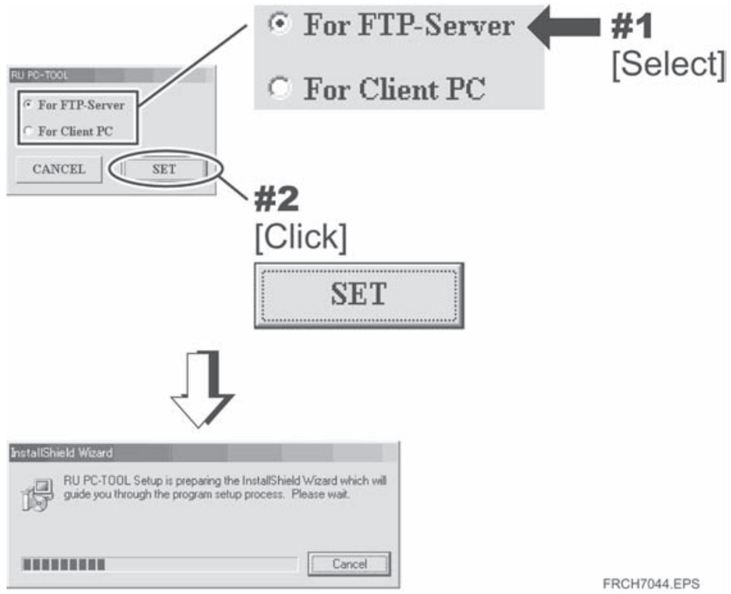
FRCH7042.EPS

3. **Select “For FTP-Server”, and click on [SET].**

◆ NOTE ◆

Always select “For FTP-Server”. If “For Client PC” is selected, the installation cannot be done properly.
If you inadvertently click [SET] with "For Client PC" chosen, perform installation again as directed under "Appendix 8. Corrective Procedure to be Performed after Improper RU PC-TOOL Installation."

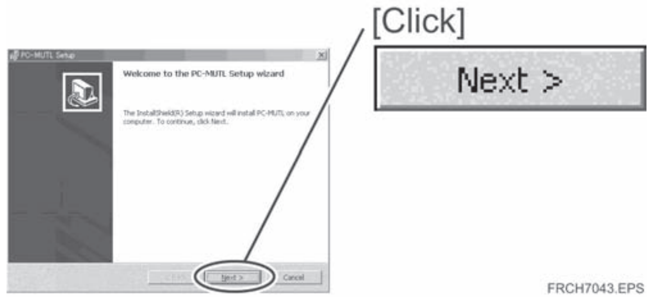
☞ ***{IN: Appendix 8._Corrective Procedure to be Performed after Improper RU PC-TOOL Installation.}***


RU PC-TOOL
◉ For FTP-Server
○ For Client PC
CANCEL
SET
#1
[Select]
#2
[Click]
SET
InstallShield Wizard
Cancel

RU PC-TOOL Setup is preparing the InstallShield Wizard which will guide you through the program setup process. Please wait.

FRCH7044.EPS

4. **Click on [NEXT].**

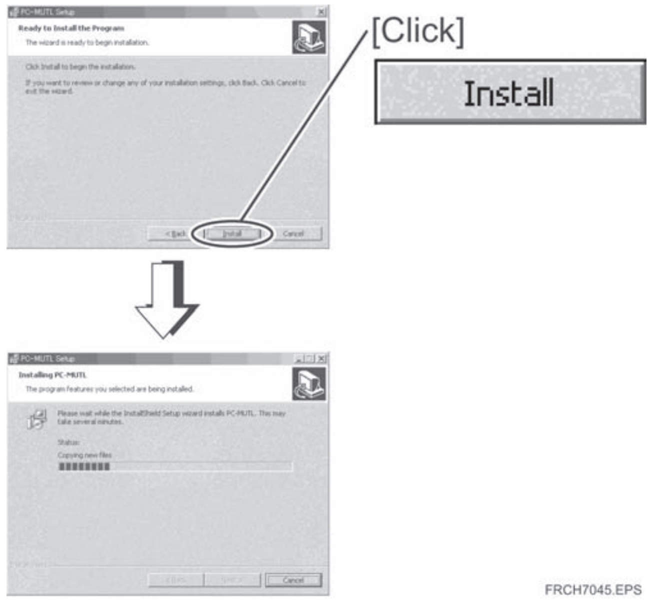

PC-MUTL Setup
< Back
Next >
Cancel
[Click]
Next >

Welcome to the PC-MUTL Setup wizard

The InstallShield(R) Setup wizard will install PC-MUTL on your computer. To continue, click Next.

FRCH7043.EPS

5. **Click on [INSTALL].**


PC-MUTL Setup
< Back
Install
Cancel
[Click]
Install
PC-MUTL Setup
< Back
Next >
Cancel

Ready to Install the Program

The wizard is ready to begin installation.

Click Install to begin the installation.

If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.

Installing PC-MUTL

The program features you selected are being installed.

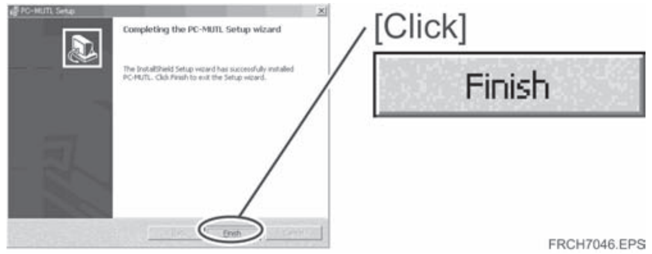
Please wait while the InstallShield Setup wizard installs PC-MUTL. This may take several minutes.

Status:

Copying new files

FRCH7045.EPS

6. **Click on [Finish] when the installation is completed.**


PC-MUTL Setup
< Back
Finish
Cancel
[Click]
Finish

Completing the PC-MUTL Setup wizard

The InstallShield Setup wizard has successfully installed PC-MUTL. Click Finish to exit the Setup wizard.

FRCH7046.EPS

→ You are then returned to the "Set Up PC-TOOL" window.

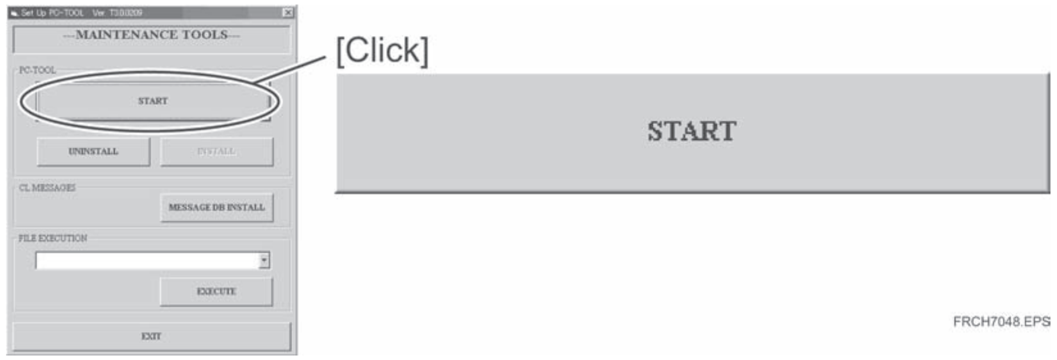
8.6 Installing RU Software

◇ REFERENCE ◇

This section describes the procedures, by way of example, where settings are made as follows:

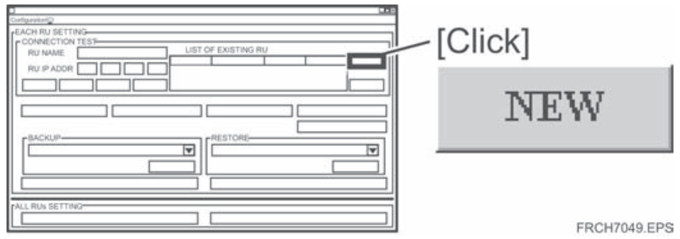
INSTALL VERSION:	*1.1*
LANGUAGE:	English
BRAND TYPE:	U.S.A (FMSU)
SCREEN TYPE:	*HOSPITAL*
LINAC CASSETTE:	*NOT USE*

1. Click on [START].


MAINTENANCE TOOLS
START
UNINSTALL
INSTALL
MESSAGE DB INSTALL
EXECUTE
EXIT
[Click]
START

FRCH7048.EPS

2. Click on [NEW].

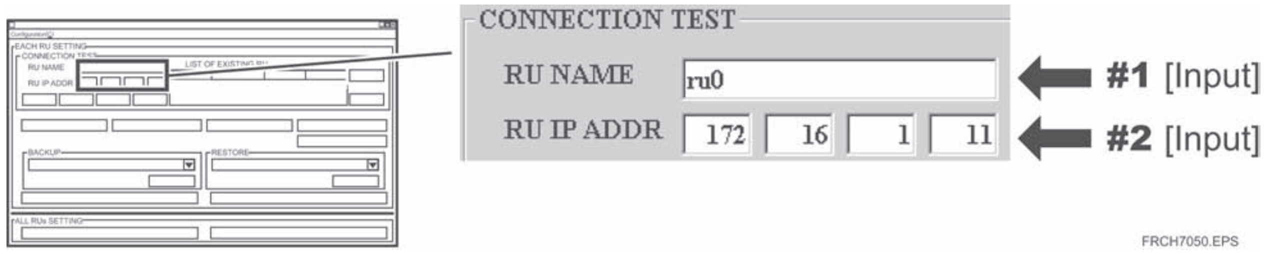


FRCH7049.EPS

3. Enter Install "RU NAME" and "RU IP ADDR".

◆ ***NOTE*** ◆

If the "Reader Unit IP Address" setting was changed from the RU operation panel before RU software installation, enter the changed address.

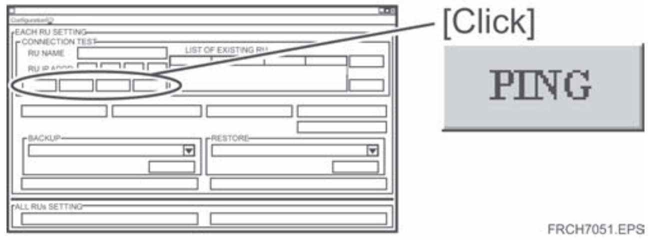


CONNECTION TEST
RU NAME: ru0
RU IP ADDR: 172 16 1 11

#1 [Input]
#2 [Input]

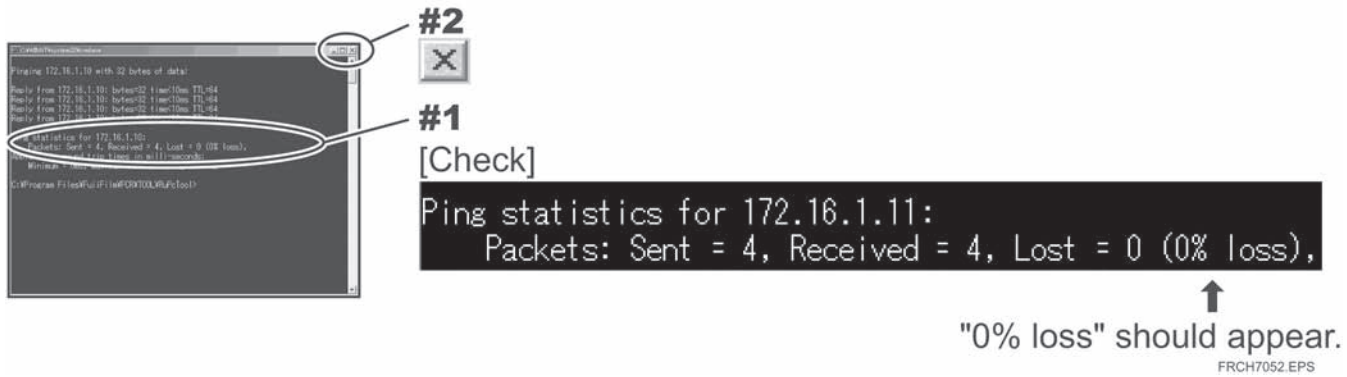
FRCH7050.EPS

4. Click on [PING].



FRCH7051.EPS

5. Check the result of PING, and click on ☒ to close the window.



```
Ping statistics for 172.16.1.11:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
```

"0% loss" should appear.

FRCH7052.EPS

- **[GOOD indication]**

  If the following message appears, the result is normal.

  | Ping statistics for 172.16.1.11: |

  | Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), |

- **[NO GOOD indication]**

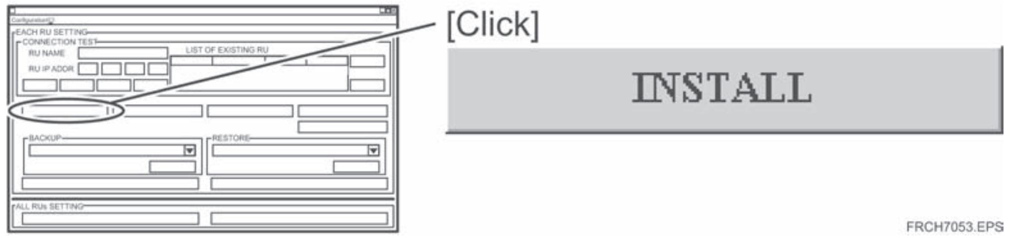
  Other than above is all abnormal. (The selected IP address of the RU is displayed.)

◆ ***NOTE*** ◆

In the case of "NO GOOD" indication

☞ ***{Troubleshooting}***

6. **Click on [INSTALL].**

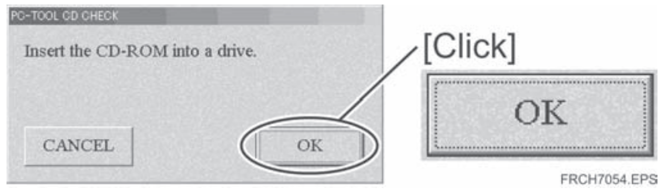

[Click]
INSTALL

FRCH7053.EPS

◇ *REFERENCE* ◇

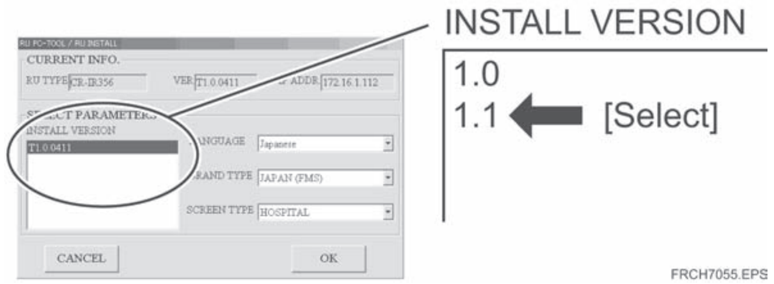
When clicking on [INSTALL], “Under maintenance” appears on the operation panel of the RU.

7. **Click on [OK].**


PC-TOOL CD CHECK
Insert the CD-ROM into a drive.
CANCEL
OK
[Click]
OK

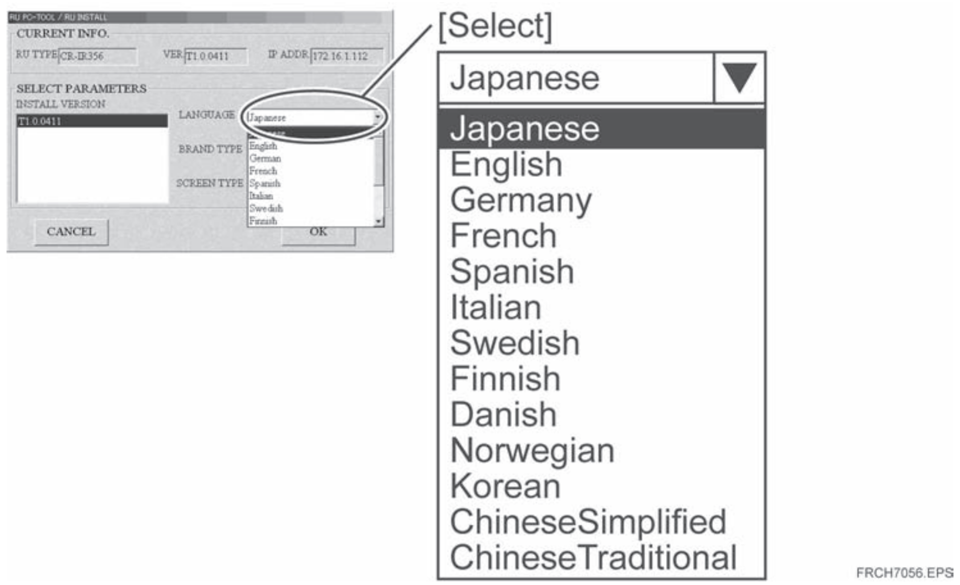
FRCH7054.EPS

8. **Select "INSTALL VERSION".**


INSTALL VERSION
1.0
1.1
[Select]

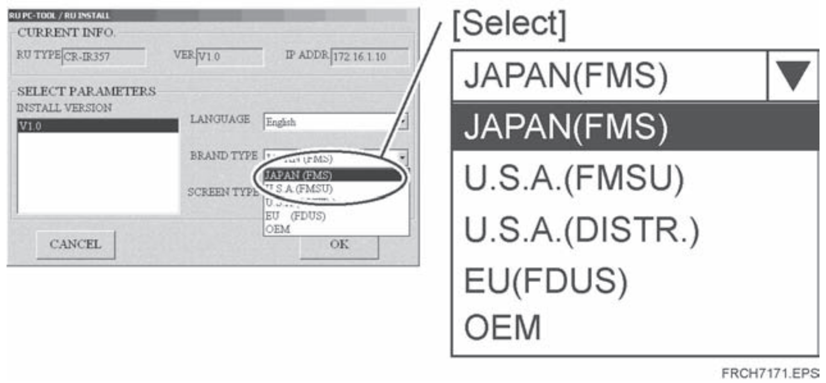
FRCH7055.EPS

9. **Select "LANGUAGE".**


[Select]
Japanese
Japanese
English
Germany
French
Spanish
Italian
Swedish
Finnish
Danish
Norwegian
Korean
ChineseSimplified
ChineseTraditional

FRCH7056.EPS

10. **Select "BRAND TYPE".**


[Select]
JAPAN(FMS)
JAPAN(FMS)
U.S.A.(FMSU)
U.S.A.(DISTR.)
EU(FDUS)
OEM

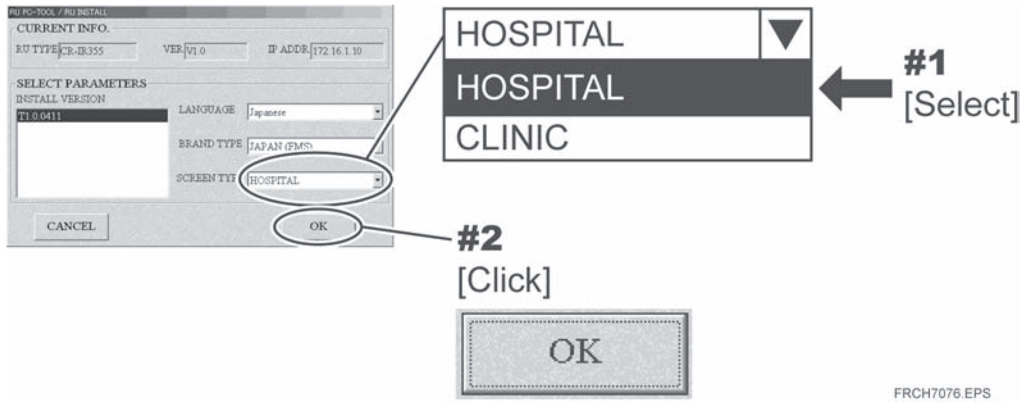
FRCH7171.EPS

11. **Select an operation panel screen type (SCREEN TYPE), and then click [OK].**

◆ ***NOTE*** ◆

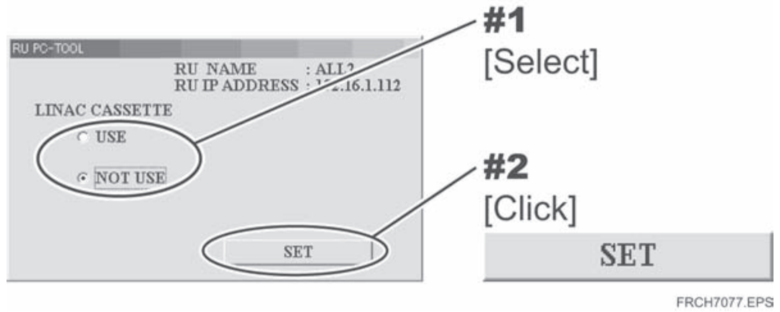
The proper selection varies with a network connection between the RU and CR console. Make a proper selection in accordance with the employed network connection. If an improper selection is made, the connection between the RU and CR console is not guaranteed.

- *When a "1:1 connection" is established between the RU and CR console, choose "CLINIC."*
- *When an "N:N connection" is established between the RU and CR console, choose "HOSPITAL."*


HOSPITAL
HOSPITAL
CLINIC
#1
[Select]
#2
[Click]
OK

FRCH7076.EPS

12. **If a LINAC CASSETTE is to be used at the user’s site, select “USE”. If the LINAC CASSETTE is not to be used, select “NOT USE”, and click on [SET].**

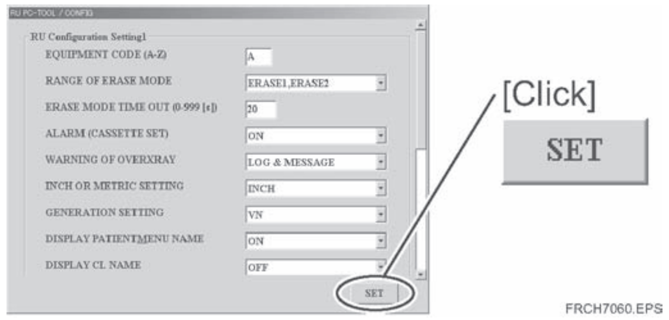

RU PC-TOOL
LINAC CASSETTE
○ USE
● NOT USE
SET
#1
[Select]
#2
[Click]
SET

FRCH7077.EPS

13. **If, for instance, the institution wishes to use nondefault CONFIGURATION information, edit the CONFIGURATION information by performing the procedure set forth under "4.13 EDIT CONFIGURATION" in the Maintenance Utility volume.**

☞ **{MU:4.13_EDIT CONFIGURATION}**

14. **Click on [SET].**



RU PC-TOOL / CONFIG

RU Configuration Setting1

EQUIPMENT CODE (A-Z): A
RANGE OF ERASE MODE: ERASE1,ERASE2
ERASE MODE TIME OUT (0-999 [s]): 20
ALARM (CASSETTE SET): ON
WARNING OF OVERXRAY: LOG & MESSAGE
INCH OR METRIC SETTING: INCH
GENERATION SETTING: VN
DISPLAY PATIENTMENU NAME: ON
DISPLAY CL NAME: OFF

SET
[Click]
SET

FRCH7060.EPS

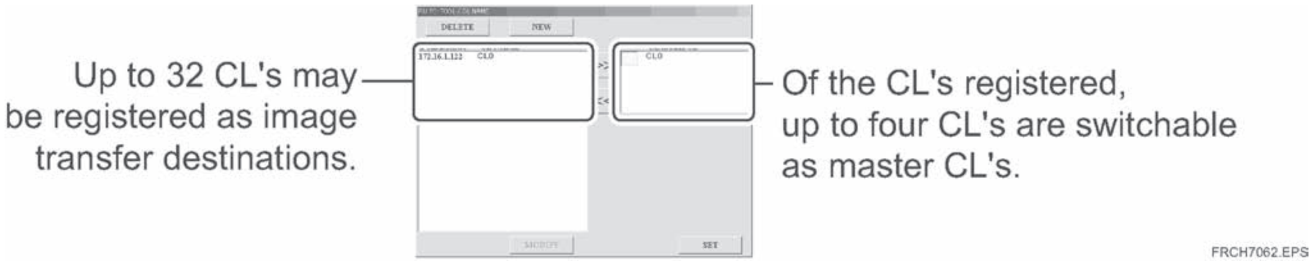
15. **Set "IP ADDRESS" and "CL NAME".**

◆ *INSTRUCTION* ◆

Enter IP ADDRESS of the CR Console to be connected with the RU.

◇ *REFERENCE* ◇

Up to 32 CR Console's may be registered as image transfer destinations. Of the CR Console's registered, up to four CR Console's are switchable as master CL's.



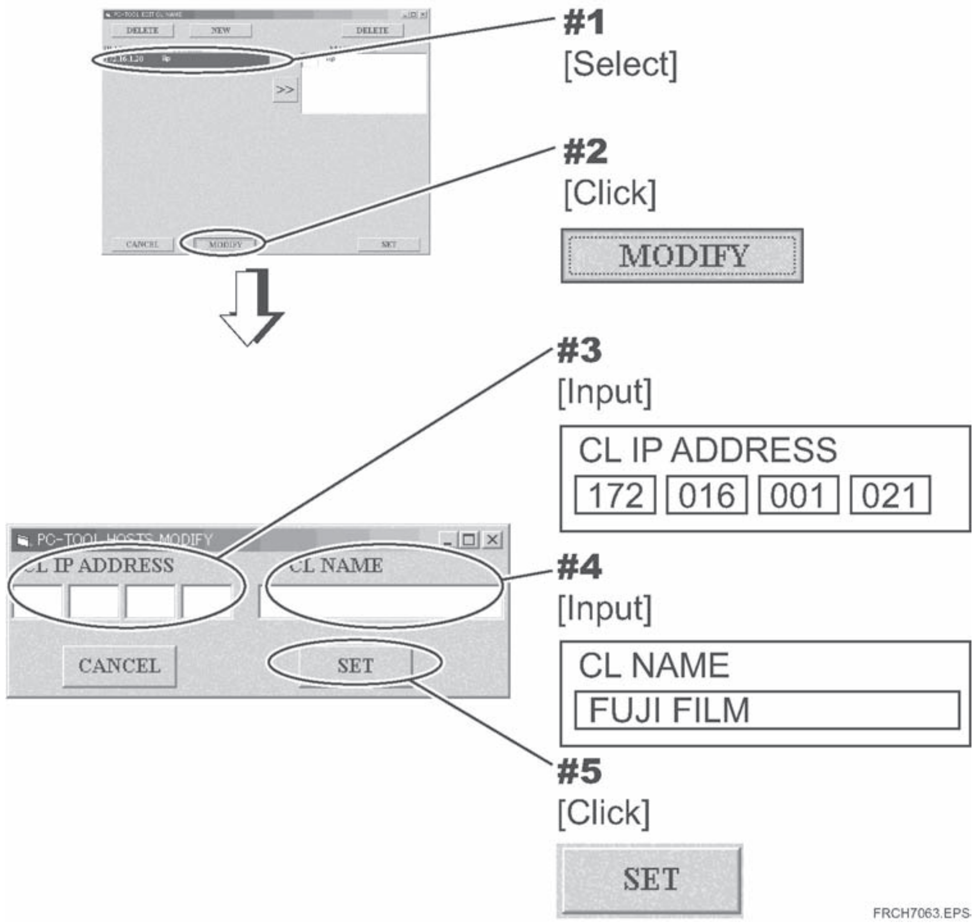
Up to 32 CL's may be registered as image transfer destinations.

Of the CL's registered, up to four CL's are switchable as master CL's.

FRCH7062.EPS

For more detail about the function that may be set on the "EDIT CL NAME" screen, see "4.14 EDIT CL NAME" of the Maintenance Utility volume.

☞ ***{MU:4.14_EDIT CL NAME}***



DELETE
NEW
DELETE
>>
CANCEL
MODIFY
SET
#1
[Select]
#2
[Click]
MODIFY
PC-TOOL HOSTS MODIFY
CL IP ADDRESS
CL NAME
CANCEL
SET
#3
[Input]
#4
[Input]
#5
[Click]
SET

CL IP ADDRESS: 172 016 001 021

CL NAME: FUJI FILM

FRCH7063.EPS

16. **Confirm the installation precautions.**

⚠ CAUTION

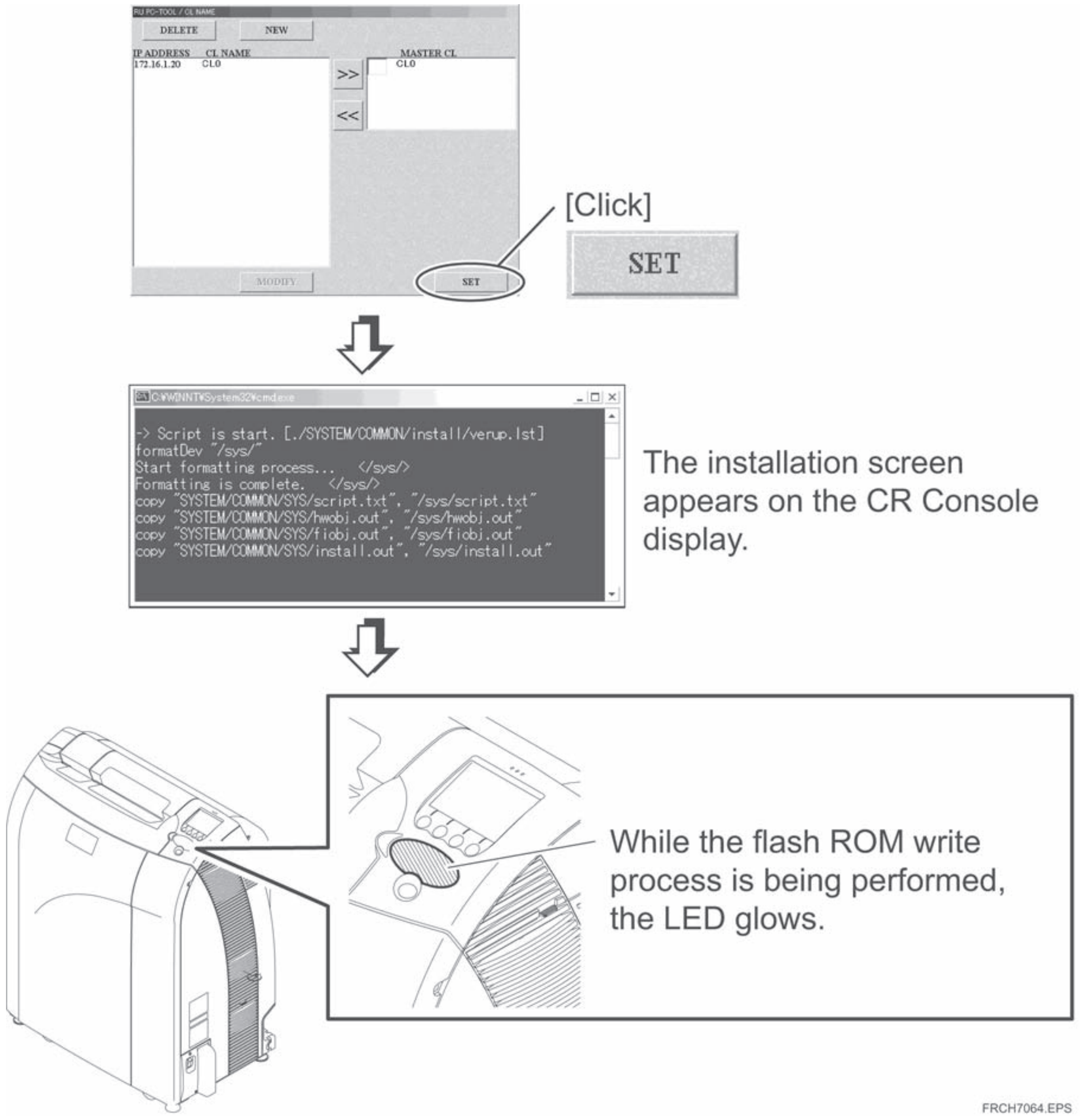
While the flash ROM is being written into, never turn OFF the RU or CR Console. If you turn OFF the power, the program stored in the memory becomes damaged and cannot restart.

17. **Click on [SET].**

When you click on [SET], the installation screen appears on the CR Console display.
While the flash ROM is being written into, the RU's LED glows.

◆ NOTE ◆

Do not close the installation screen until the flash ROM write process is completed. If you inadvertently close the installation screen, return to step 7 and perform the installation procedure again. The flash ROM write process takes about 8 minutes.



IP ADDRESS	CL NAME
172.16.1.20	CL0

MASTER CL: CL0

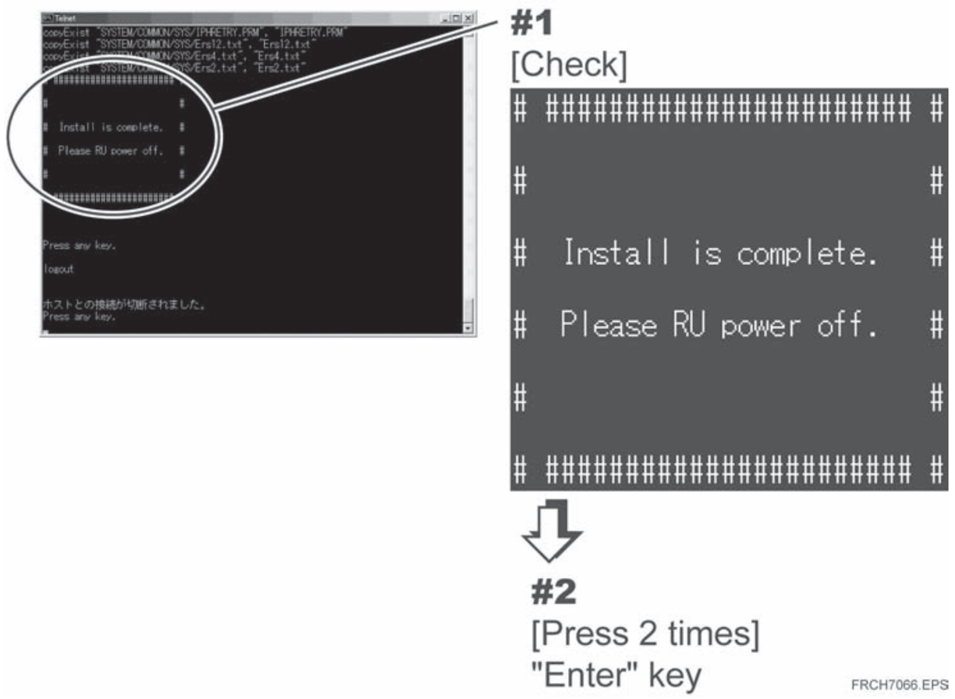
```
-> Script is start. [./SYSTEM/COMMON/install/verup.lst]
formatDev "/sys/"
Start formatting process...   </sys/>
Formatting is complete.   </sys/>
copy "SYSTEM/COMMON/SYS/script.txt", "/sys/script.txt"
copy "SYSTEM/COMMON/SYS/hwobj.out", "/sys/hwobj.out"
copy "SYSTEM/COMMON/SYS/fiobj.out", "/sys/fiobj.out"
copy "SYSTEM/COMMON/SYS/install.out", "/sys/install.out"
```

The installation screen appears on the CR Console display.

While the flash ROM write process is being performed, the LED glows.

FRCH7064.EPS

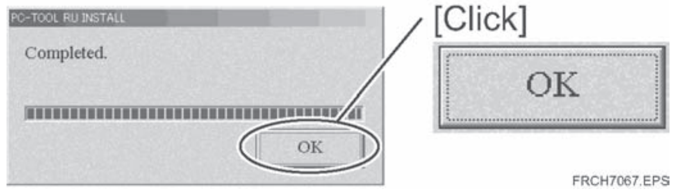
18. **Verify that the flash ROM write process is completed, and then press the [Enter] key twice.**



```
copyExist "SYSTEM/COMMON/SYS/IPHRETRY.PRM", "IPHRETRY.PRM"
copyExist "SYSTEM/COMMON/SYS/Ers12.txt", "Ers12.txt"
copyExist "SYSTEM/COMMON/SYS/Ers4.txt", "Ers4.txt"
copyExist "SYSTEM/COMMON/SYS/Ers2.txt", "Ers2.txt"
# ###################### #
#                        #
#  Install is complete.  #
#  Please RU power off.  #
#                        #
# ###################### #

Press any key.

logout

ホストとの接続が切断されました。
Press any key.
```

FRCH7066.EPS

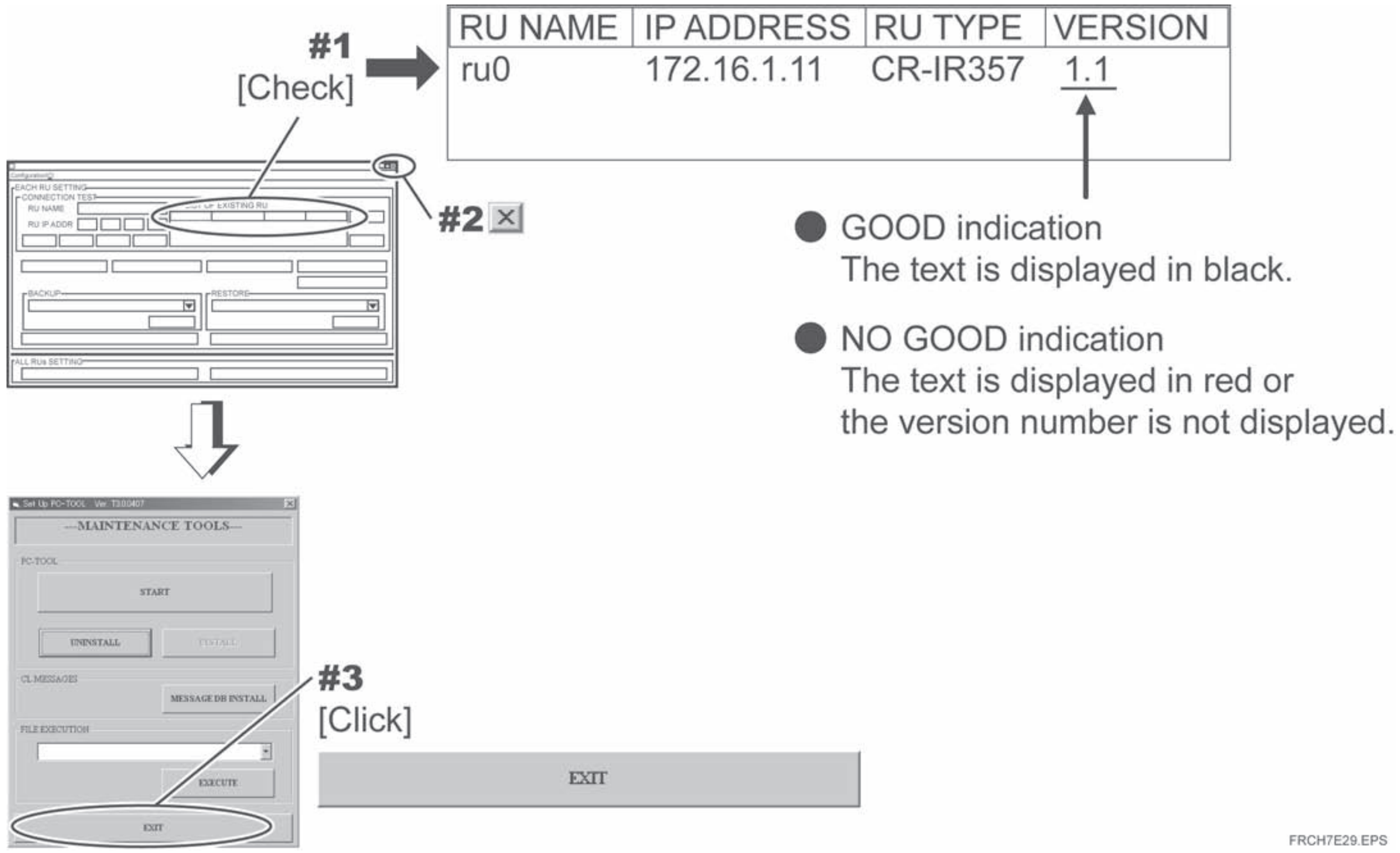
19. **Click on [OK].**



Completed.

FRCH7067.EPS

20. **Check the version of the RU software, and close RU PC-TOOL.**



RU NAME	IP ADDRESS	RU TYPE	VERSION
ru0	172.16.1.11	CR-IR357	1.1

#1
[Check]
#2
#3
[Click]
MAINTENANCE TOOLS
START
UNINSTALL
INSTALL
MESSAGE DB INSTALL
EXECUTE
EXIT
EXIT
FRCH7E29.EPS

● GOOD indication
The text is displayed in black.

● NO GOOD indication
The text is displayed in red or
the version number is not displayed.

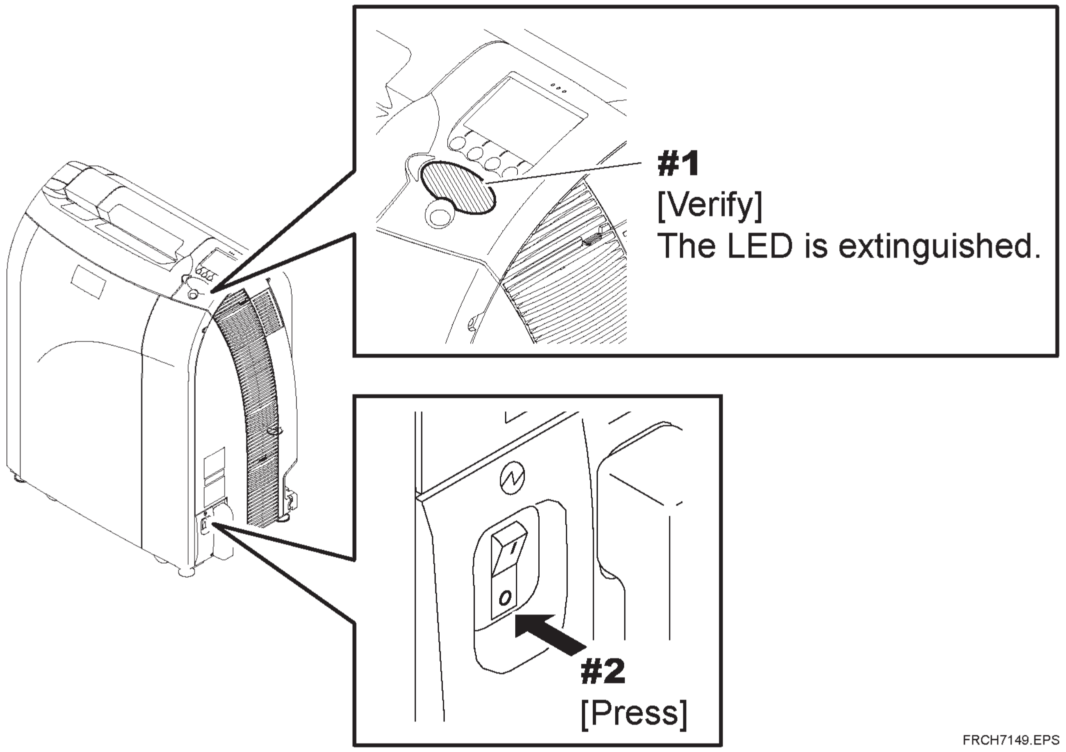
◆ **NOTE** ◆

In the case of "NO GOOD" indication, return to step 1 and perform install procedures all over again.

21. **Verify that the RU's LED is extinguished, and then turn OFF the RU.**

◇ *REFERENCE* ◇

The message "Under maintenance" is displayed on the operation panel. However, turning OFF the RU power does not affect the RU's functionality.



#1
[Verify]
The LED is extinguished.
#2
[Press]
FRCH7149.EPS

22. **Turn ON the power of the RU.**

9. Image/Conveyance Checks

In this section, the following checks are made as last-time verification for final placement.
- Conveyance checks
- Image checks

9.1 Check Before Procedures

◆ **NOTES** ◆

- *For the IP used for image/conveyance checks, an IP of the maximum size used in the hospital should be employed.*
- *Make sure that the IP to be used does not contain any important image data exposed.*

1. **Check to ensure that the "READY" screen appears.**

◇ *REFERENCE* ◇

The screen contents of the RU's operation panel vary with the LANGUAGE and SCREEN TYPE selections made during installation. For details on the screen contents of the RU's operation panel, see "1.3.3 Operation Panel Display Screen Contents" in the "Machine Description" volume.

☞ ***{MD:1.3.3_Operation Panel Display Screen Contents}***

2. **Perform "Secondary Erasure" on the spontaneous radiation and image accumulated on the IP to be used.**

☞ **{Instruction Manual}**

3. **Perform IP exposures.**

◆ **NOTE** ◆

Expose the IP at X-ray tube voltage of 80 kVp. Otherwise, the image check cannot be done normally.

◆ **INSTRUCTIONS** ◆

- *Expose two IPs of the largest size to be used at the user’s site to the following dose.*
- *With the X-ray tube, the first IP should be exposed in a normal orientation, and the second in a 180-degree upside-down orientation.*

- X-ray tube: Tungsten X-ray tube
- Exposure X-ray dose: 1 mR
- Maximum size: IP of 14" x 14" (35 cm x 35 cm) or 14" x 17" (35 cm x 43 cm) size
- Reference conditions: Distance 1.8 m
  Voltage 80 kVp
  Amperage 50 mA
  Time 0.013 sec

9.2 Image/Conveyance Checks

◆ NOTE ◆

Because the "MENU" and so forth differ depending on the IP type, image checks should be performed with the "MENU" specified below.

1. Read the IP prepared in “9.1 Check before procedures” by the CR Console menus “QC/TEST” and “Image Format” or “Image Format-2” and “SINGLE”, and output an image.

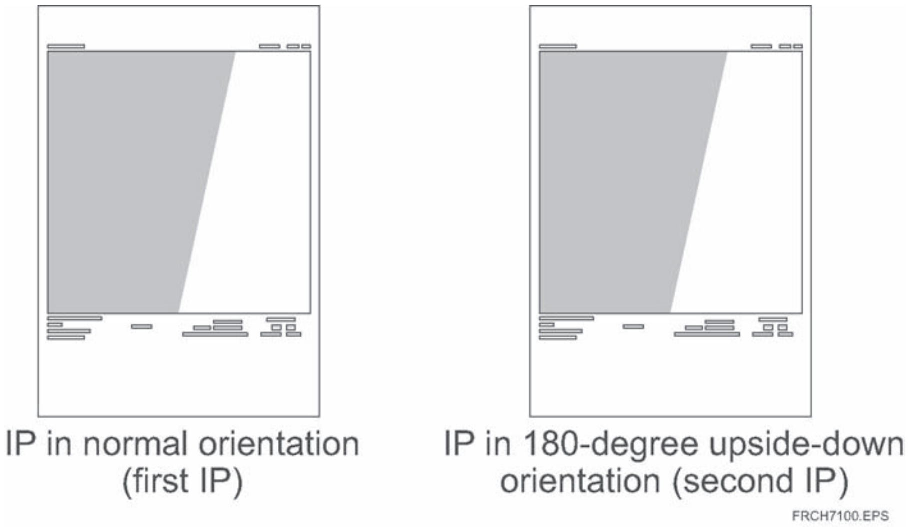
2. Verify that there is no "unusual nonuniformity" found on the output film or on the image displayed on the image monitor.

◆ CHECK ◆

There should be no uneven density difference in the main scan direction.

If there is any uneven density difference, compare the films outputted from the two IPs of the same size, and determine whether such nonuniformity is caused by the machine or X-ray tube.

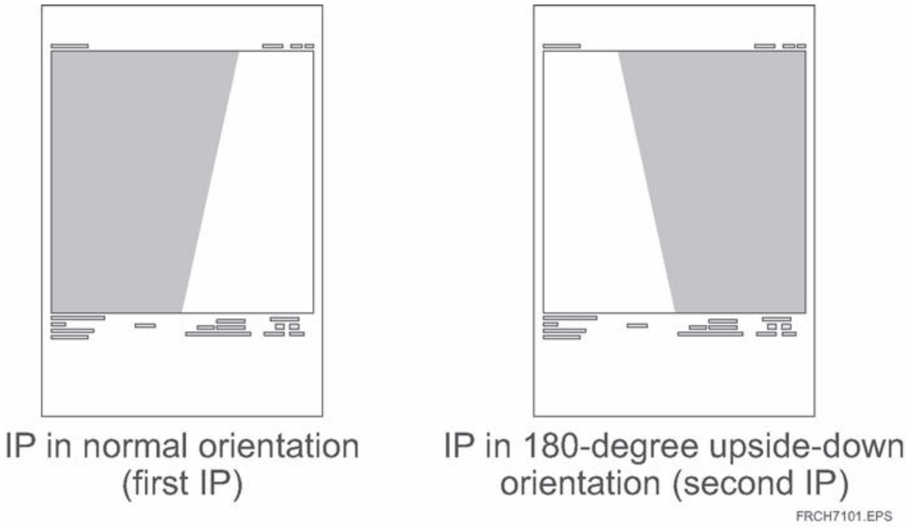
- **If there is uneven density difference in the same direction on two films**


IP in normal orientation
(first IP)
IP in 180-degree upside-down
orientation (second IP)
FRCH7100.EPS

→ The machine may be the cause of such nonuniformity.

☞ **{Troubleshooting}**

- **If positions of uneven density difference are different**


IP in normal orientation
(first IP)
IP in 180-degree upside-down
orientation (second IP)
FRCH7101.EPS

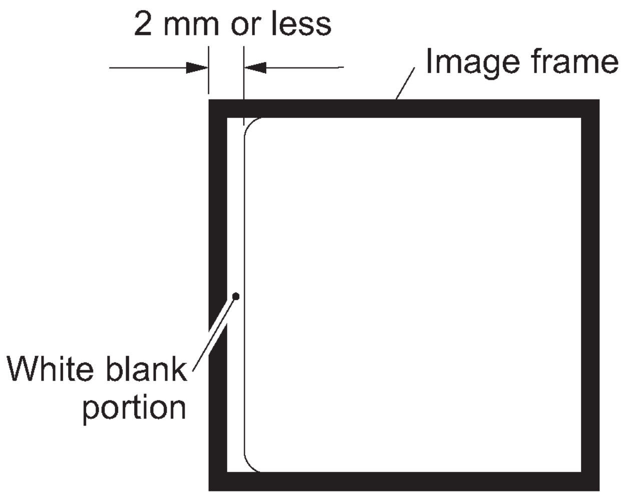
→ The X-ray tube may be the cause of such nonuniformity.

3. **Check the image format.**

Make sure that the white blank portion is 2 mm or less, as actually measured on the IP, from the outermost edge of the image frame of the film outputted.

◆ **CHECK** ◆

The white blank portion should be 2 mm or less.
If anything abnormal is found:
☞ ***{Troubleshooting}***



FRCH7102.EPS

◆ **NOTE** ◆

The distance measured on the film may differ from the actual size on the IP, depending on the reading size and film size. The actual size on the IP should be calculated using the distance measured on the film and the reduction factor for the film. Compute the actual size on the IP according to the following equation.

$$\text{Actual size on IP} = \text{Measured value} \times \frac{100}{\text{Reduction factor (\%)}}$$

FRCH7144.EPS

10. Confirming the S Value

The procedure set forth below is used to read an IP, which has been exposed to 1 mR of radiation, during a 1-minute period between 10 and 11 minutes after an X-ray exposure, output the read image, and check that the S value for 1 mR of radiation, which is determined from the displayed S value and average dose value, is within the control limits.

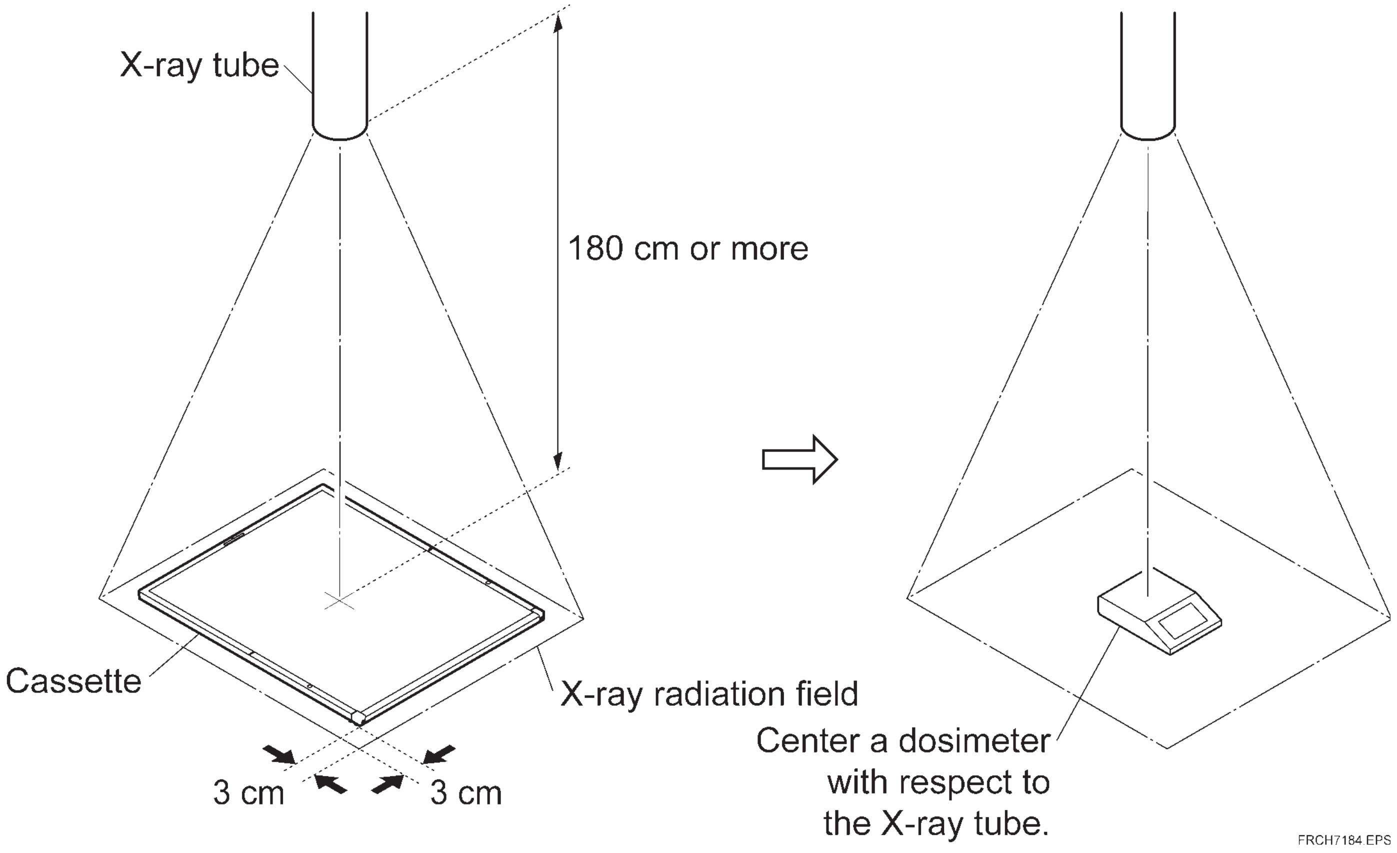
◇ REFERENCE ◇

The method for calculating the S value control limits is outlined below:

- *S value control limits for user adjustments*
  - *Upper limit: 200 x 1.5 = 300*
  - *Lower limit: 200/1.5 = 133*
- *S value control limits for service technician adjustments*
  - *Upper limit: 200 x 1.3 = 260*
  - *Lower limit: 200/1.3 = 154*

To eliminate the necessity for adjusting the machine within a short period of time after service technician inspection/adjustment, the S value control range for service technician adjustments is narrower than that for user adjustments.

1. **Position a cassette so that the cassette center coincides with the X-ray radiation field center. Perform setup so that the X-ray radiation field outline is approximately 3 cm outside the cassette outer frame. Temporarily remove the cassette and then position a dosimeter at the radiation field center.**



2. **Set the tube voltage to 80 kVp. Confirm the exposure conditions under which the radiation dose is 1 mR.**

◆ **NOTE** ◆

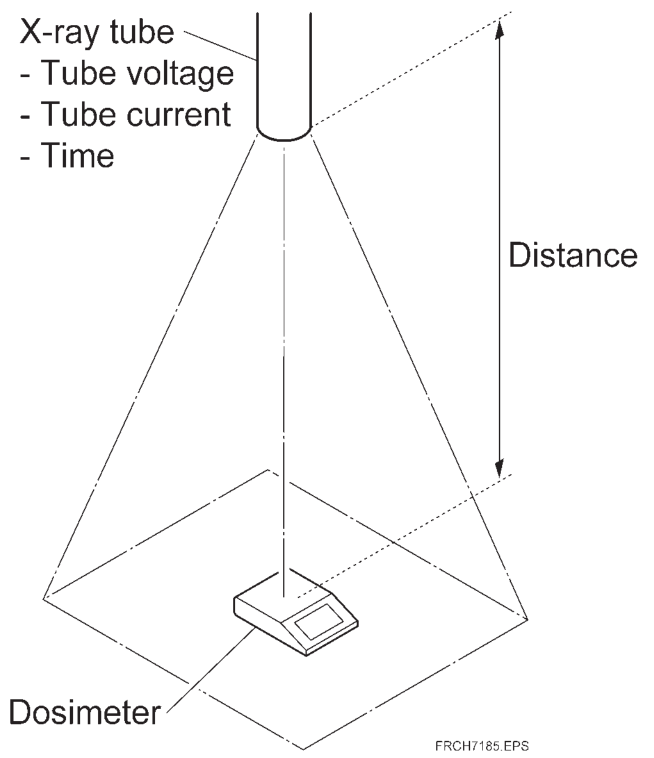
If the radiation dose measured by the dosimeter is not 1 mR, leave the tube voltage at 80 kVp and adjust the distance, tube current, and time to obtain a radiation dose of 1 mR. Record the adjusted exposure conditions.

- *Distance: ___cm*
- *Tube voltage: ___kVp*
- *Tube current: ___mA*
- *Time: ___sec*

◇ REFERENCE ◇

If the exposure conditions are unknown, use the following values as the reference values and make fine adjustments:

- Distance: 180 cm
- Tube voltage: 80 kVp
- Tube current: 50 mA
- Time: 0.013 sec



3. **Under the exposure conditions confirmed in step 2, measure the radiation dose five times and average the measured values.**

--- Example ---

First measurement	Second measurement	Third measurement	Fourth measurement	Fifth measurement	Average value
0.9	1.0	1.1	1.2	1.0	1.04

4. **Enter the exposure conditions and the average radiation dose determined in step 3 in the "FCR S Value Control Table."**

5. **Subject the natural radiation and image stored on the employed IP to secondary erasure.**

☞ **{Instruction Manual}**

◆ NOTE ◆

Before secondary erasure, confirm that no important image data is recorded on the employed IP.

6. **Under the exposure conditions confirmed in step 2, expose a 14" x 14" (35 cm x 35 cm) or 14" x 17" (35 cm x 43 cm) IP to X-ray radiation.**

◆ NOTE ◆

Use the largest size IP of all the IPs used at the institution.

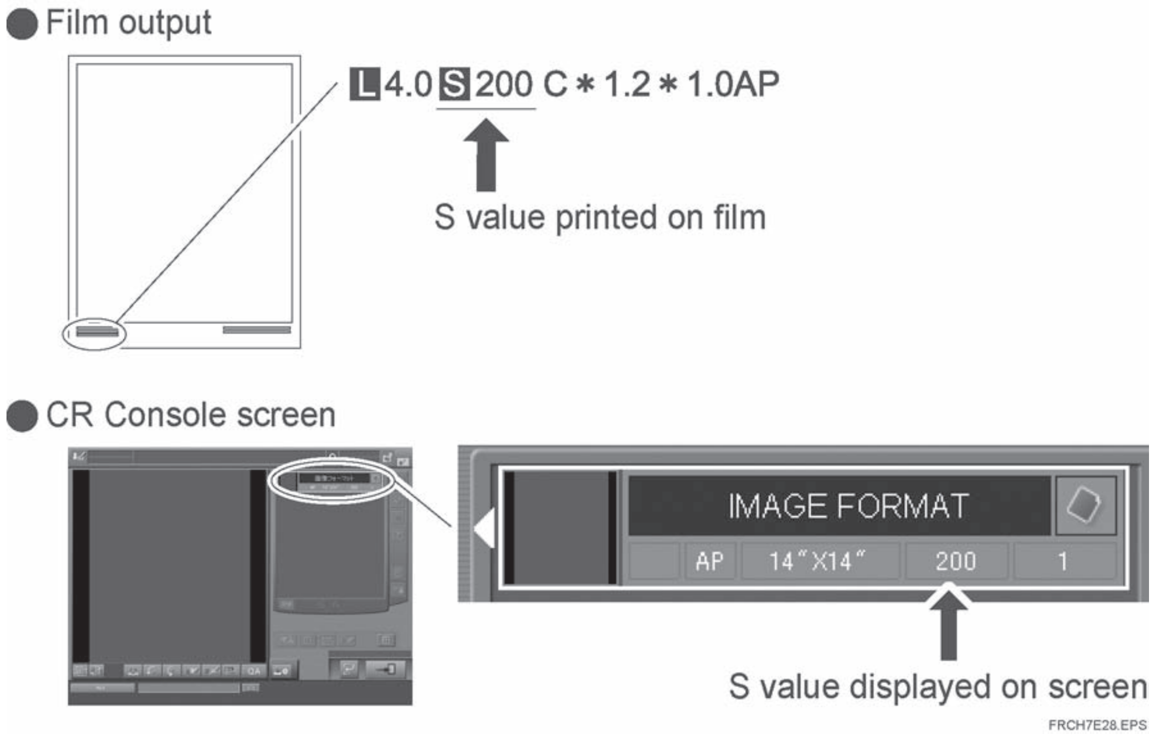
7. **Read the IP exposed in step 6 during a 1-minute period between 10 and 11 minutes after the exposure by using the "QC/TEST," "Image Format" or "Image Format - 2," and "SINGLE" CR Console menus, and then output the read image.**

8. **Determine the "S value for 1 mR of radiation" from the displayed S value (the S value printed on the film or displayed on the CR Console screen) and the average radiation dose value obtained in step 3.**

--- Example ---

Displayed S value: 200

Average radiation dose value obtained in step 3: 1.04



S value for 1 mR of radiation = Displayed S value x average radiation dose value

= 200 x 1.04

= 208

9. **Check that the "S value for 1 mR of radiation," which was determined in step 8, is within the control limits.**

--- Example ---

Lower control limit value Upper control limit value

154 < 208 < 260

↑

Check that the "S value for 1 mR of radiation," which was determined in step 8, is between the upper and lower control limit values.

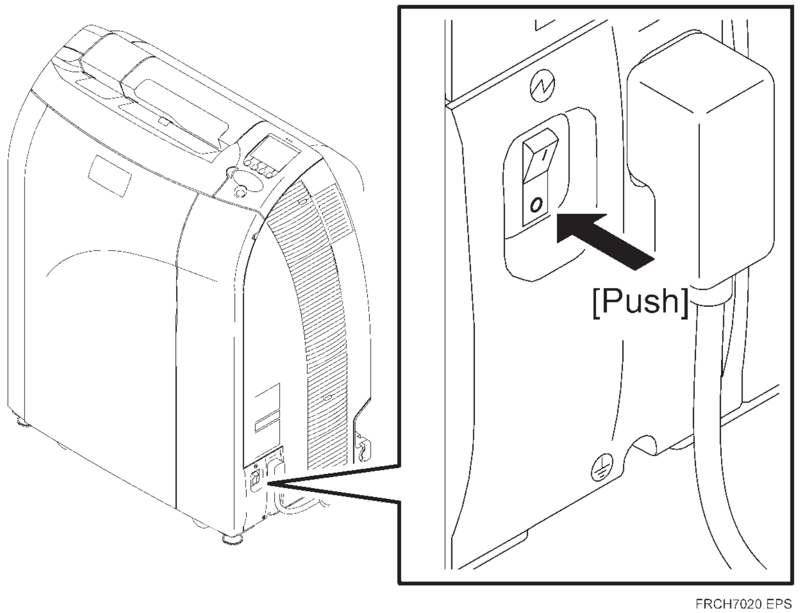
◆ NOTE ◆

If the "S value for 1 mR of radiation," which was determined in step 8, is not between the upper and lower control limit values, make sensitivity correction as directed in "15.3 Sensitivity Correction" and then confirm the S value again.

☞ ***{MC:15.3_Sensitivity Correction}***

11. Powering OFF the CR Console/RU

1. Shut down the system of the CR Console.
2. Shut down the system of the RU.
3. Turn OFF the power of the RU.

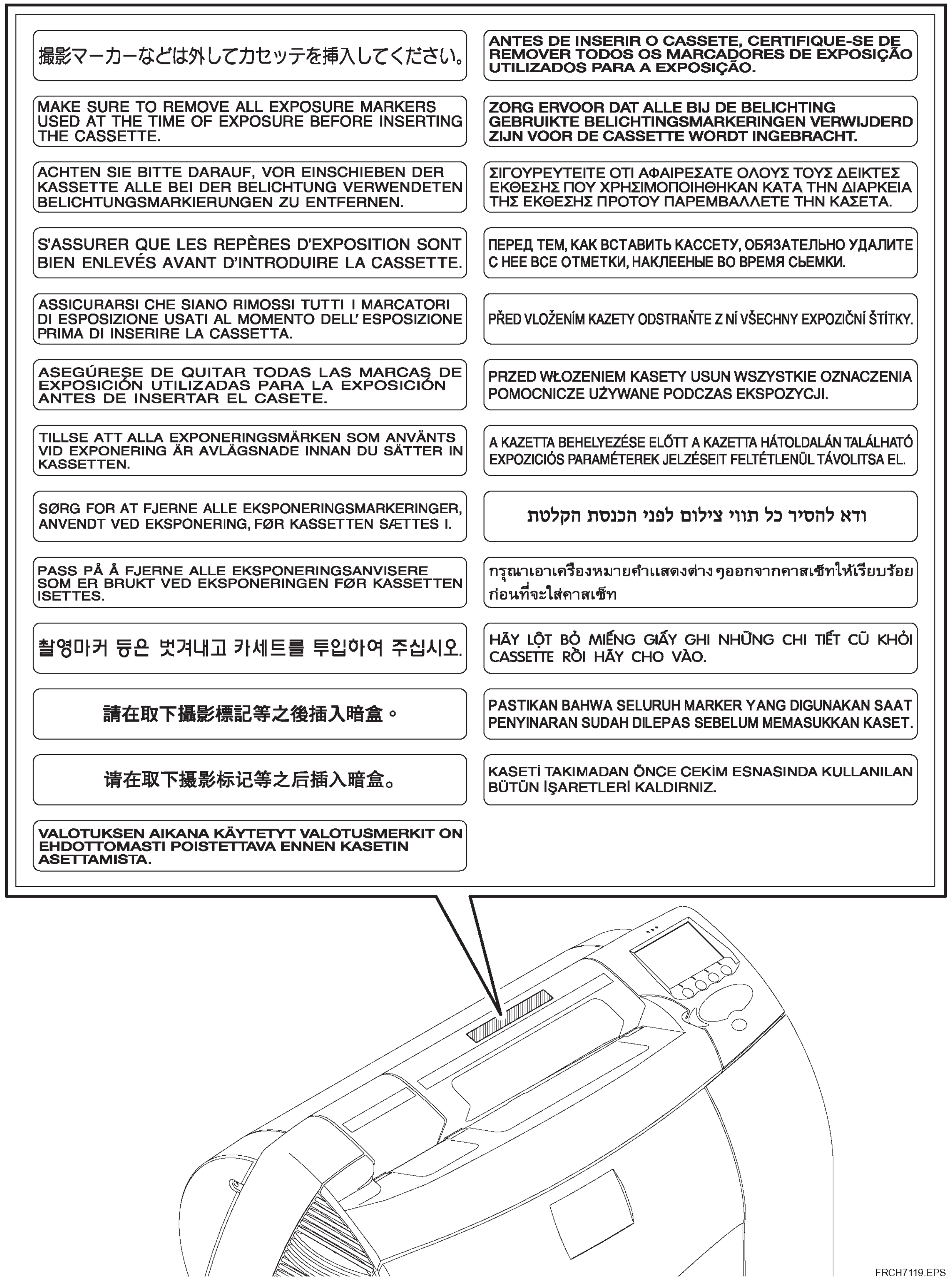


12. Cleaning the CR Console/RU

1. Clean the monitor and covers of the CR Console with a dry cloth.
2. Clean the covers of the RU with a moistened cloth.
3. Peel the seal off the operation panel.

13. Lead Precaution Label

1. **Apply the lead precaution label suitable for the local language.**



撮影マーカーなどは外してカセッテを挿入してください。

MAKE SURE TO REMOVE ALL EXPOSURE MARKERS
USED AT THE TIME OF EXPOSURE BEFORE INSERTING
THE CASSETTE.

ACHTEN SIE BITTE DARAUF, VOR EINSCHIEBEN DER
KASSETTE ALLE BEI DER BELICHTUNG VERWENDETEN
BELICHTUNGSMARKIERUNGEN ZU ENTFERNEN.

S'ASSURER QUE LES REPÈRES D'EXPOSITION SONT
BIEN ENLEVÉS AVANT D'INTRODUIRE LA CASSETTE.

ASSICURARSI CHE SIANO RIMOSSI TUTTI I MARCATORI
DI ESPOSIZIONE USATI AL MOMENTO DELL' ESPOSIZIONE
PRIMA DI INSERIRE LA CASSETTA.

ASEGÚRESE DE QUITAR TODAS LAS MARCAS DE
EXPOSICIÓN UTILIZADAS PARA LA EXPOSICIÓN
ANTES DE INSERTAR EL CASETE.

TILLSE ATT ALLA EXPONERINGSMÄRKEN SOM ANVÄNTS
VID EXPONERING ÄR AVLÄGSNADE INNAN DU SÄTTER IN
KASSETTEN.

SØRG FOR AT FJERNE ALLE EKSPONERINGSMARKERINGER,
ANVENDT VED EKSPONERING, FØR KASSETTEN SÆTTES I.

PASS PÅ Å FJERNE ALLE EKSPONERINGSANVISERE
SOM ER BRUKT VED EKSPONERINGEN FØR KASSETTEN
ISETTES.

촬영마커 등은 벗겨내고 카세트를 투입하여 주십시오.

請在取下攝影標記等之後插入暗盒。

请在取下摄影标记等之后插入暗盒。

VALOTUKSEN AIKANA KÄYTETYT VALOTUSMERKIT ON
EHDOTTOMASTI POISTETTAVA ENNEN KASETIN
ASETTAMISTA.

ANTES DE INSERIR O CASSETE, CERTIFIQUE-SE DE
REMOVER TODOS OS MARCADORES DE EXPOSIÇÃO
UTILIZADOS PARA A EXPOSIÇÃO.

ZORG ERVOOR DAT ALLE BIJ DE BELICHTING
GEBRUIKTE BELICHTINGSMARKERINGEN VERWIJDERD
ZIJN VOOR DE CASSETTE WORDT INGEBRACHT.

ΣΙΓΟΥΡΕΥΤΕΙΤΕ ΟΤΙ ΑΦΑΙΡΕΣΑΤΕ ΟΛΟΥΣ ΤΟΥΣ ΔΕΙΚΤΕΣ
ΕΚΘΕΣΗΣ ΠΟΥ ΧΡΗΣΙΜΟΠΟΙΗΘΗΚΑΝ ΚΑΤΑ ΤΗΝ ΔΙΑΡΚΕΙΑ
ΤΗΣ ΕΚΘΕΣΗΣ ΠΡΟΤΟΥ ΠΑΡΕΜΒΑΛΛΕΤΕ ΤΗΝ ΚΑΣΕΤΑ.

ПЕРЕД ТЕМ, КАК ВСТАВИТЬ КАССЕТУ, ОБЯЗАТЕЛЬНО УДАЛИТЕ
С НЕЕ ВСЕ ОТМЕТКИ, НАКЛЕЕНЫЕ ВО ВРЕМЯ СЬЕМКИ.

PŘED VLOŽENÍM KAZETY ODSTRAŇTE Z NÍ VŠECHNY EXPOZIČNÍ ŠTÍTKY.

PRZED WŁOZENIEM KASETY USUN WSZYSTKIE OZNACZENIA
POMOCNICZE UŻYWANE PODCZAS EKSPOZYCJI.

A KAZETTA BEHELYEZÉSE ELŐTT A KAZETTA HÁTOLDALÁN TALÁLHATÓ
EXPOZICIÓS PARAMÉTEREK JELZÉSEIT FELTÉTLENÜL TÁVOLITSA EL.

ודא להסיר כל תווי צילום לפני הכנסת הקלטת

กรุณาเอาเครื่องหมายคำแสดงต่าง ๆออกจากคาสเซ็ทให้เรียบร้อย
ก่อนที่จะใส่คาสเซ็ท

HÃY LỘT BỎ MIẾNG GIẤY GHI NHỮNG CHI TIẾT CŨ KHỎI
CASSETTE RỒI HÃY CHO VÀO.

PASTIKAN BAHWA SELURUH MARKER YANG DIGUNAKAN SAAT
PENYINARAN SUDAH DILEPAS SEBELUM MEMASUKKAN KASET.

KASETİ TAKIMADAN ÖNCE CEKİM ESNASINDA KULLANILAN
BÜTÜN İŞARETLERİ KALDIRNIZ.

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Appendix 1. ADDITIONAL PROTECTIVE GROUNDING

Additional protective grounding will be required if installing this equipment in the patient environment with the connected equipment in a non-medically used room. Refer to Medical System Standard, IEC60601-1-1.
However, there may be cases where additional protective grounding is not possible.
(For example in cases like non-metallic faceplate screws as well as boxes and isolated supply systems etc.) If this should happen, please refer to “Counter-measures for additional protective grounding” on the next page.
This installation work should only be performed by persons certified to handle electrical facility construction.
Definitions of “patient environment”, “medically-used room”, and “non-medically used room” are given below.

● Patient Environment

Patient environment is the area for the patient to receive medical procedures (treatment, tests, diagnosis, monitoring). It is the space measuring 2.5 m in all four directions and 2.5 m in height from the area of the patient’s body.
It excludes the space traveled by the patient to reach the medically-used room.

● Medically-Used Room

Room equipped with protective grounding (medical use outlet or medical use grounding terminal) implemented by the medical grounding method. The protective grounding inside the medically-used room is equipotential, and the protective grounding of this medically-used room is equipotential to that in the other medically-used room.
Generally, a portion of the medically-used room is the patient environment.

● Non-Medically Used Room

Areas outside the medically-used room are considered the non-medically used room.

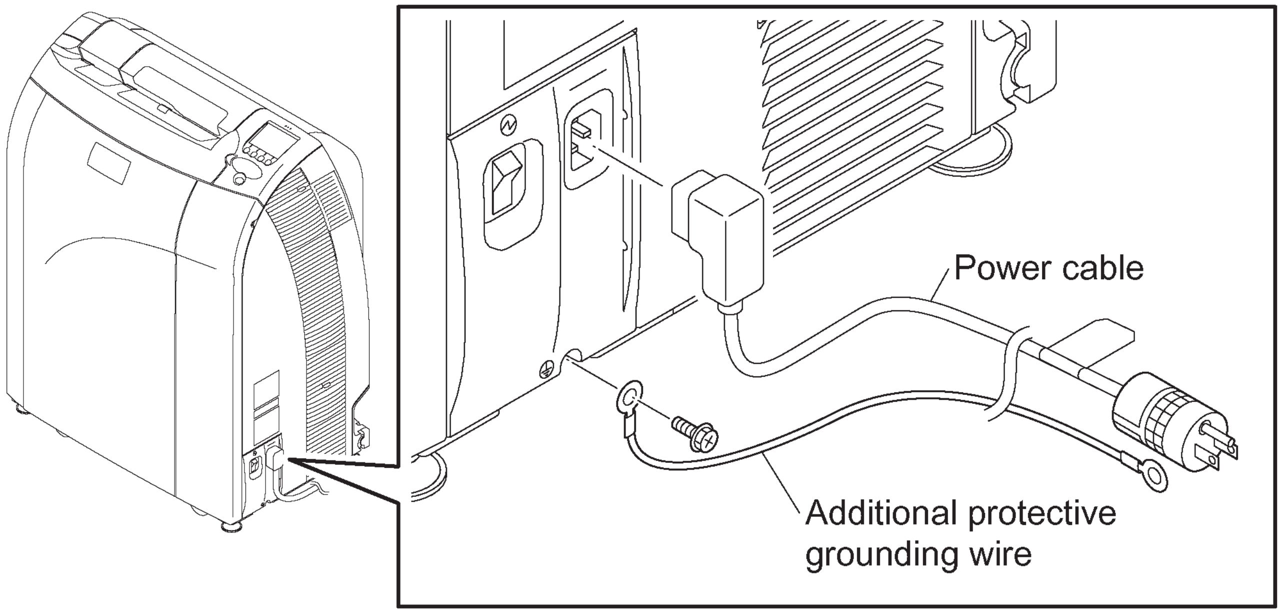
■ Connection Locations of Cables for Additional Protective Grounding of the Equipment and Clamp Locations

◆◆ *INSTRUCTION* ◆◆

Please use power supply cord and clamp (which is required for keeping the additional protective ground cord in position) approved by the electrical standard of the country to which the equipment is to be installed.

<Counter-measures for additional protective grounding>

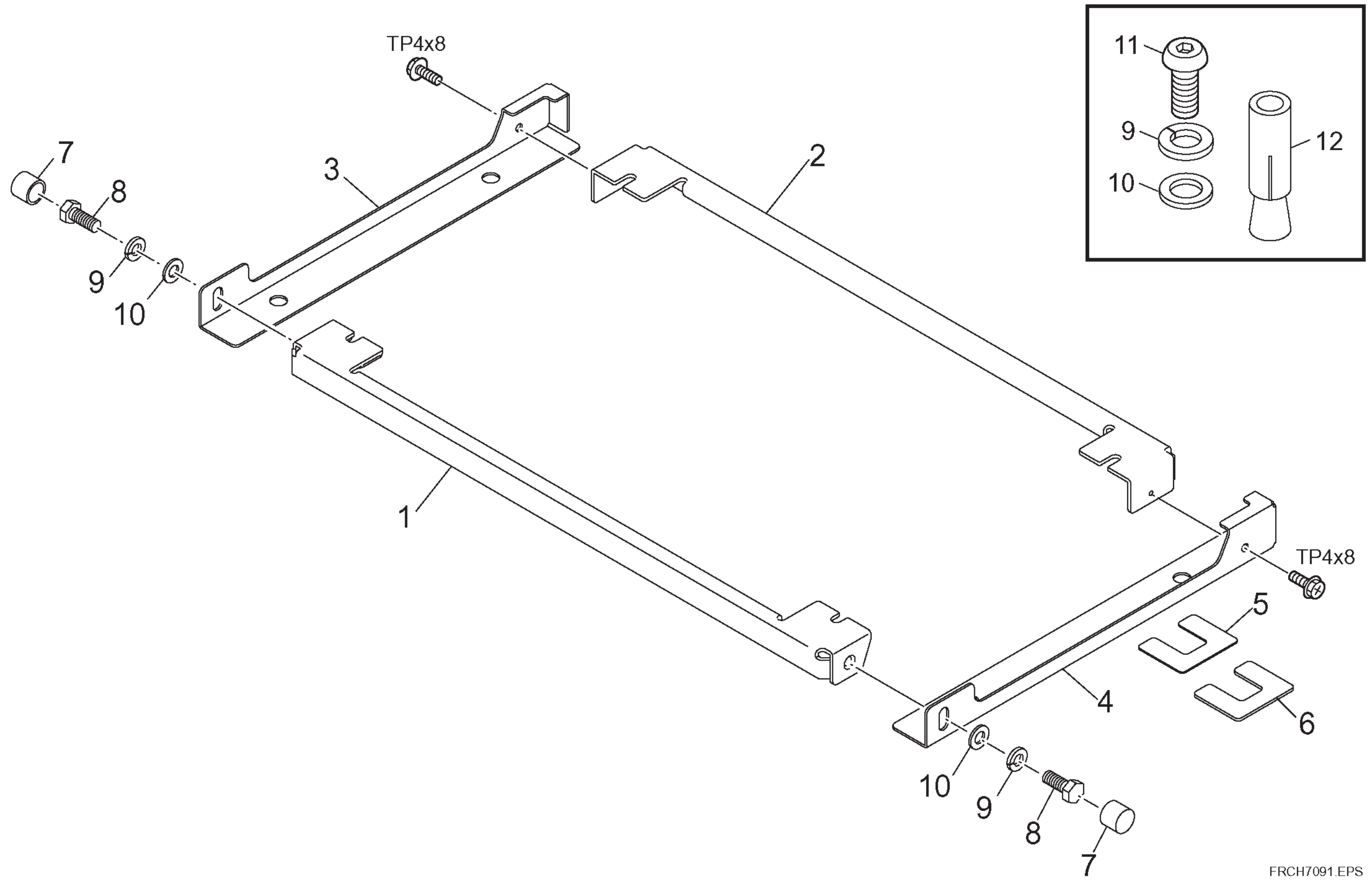
1. *Engage the services of a professional to make the necessary preparations for the connection of additional protective grounding.*
2. *If the connected device possess a hospital grade earth terminal and is mobile, move the connected device and replace with a power supply plug which has hospital grade earth terminal.*
3. *Install a isolating transformer to the connected device. In this way, the power supply from the connected device will be separated from the main power supply.*



FRCH7E26.EPS

Appendix 2. Securing the Machine with the Anti-Topple Retainer

1. Components of Anti-Topple Retainer Kit



No.	Name	Qty.	Remarks
1	Bracket (front)	1	356Y0475
2	Bracket (rear)	1	356Y0502
3	Bracket (left-hand side)	1	356Y0499
4	Bracket (right-hand side)	1	356Y0498
5	Spacer (1 mm)	6	347N2108
6	Spacer (2 mm)	4	347N2109
7	Cap	2	317S1064
8	Hex head socket bolt (8x15)	2	304S1000820
9	Spring washer (SW8)	6	309S0220008
10	Plain washer (W8)	6	309S0110008
11	Hex socket head button bolt (8x20)	4	304S5000820
12	Anchor nut (Na8)	4	305S0080

2. Securing the Machine with the Anti-Topple Retainer

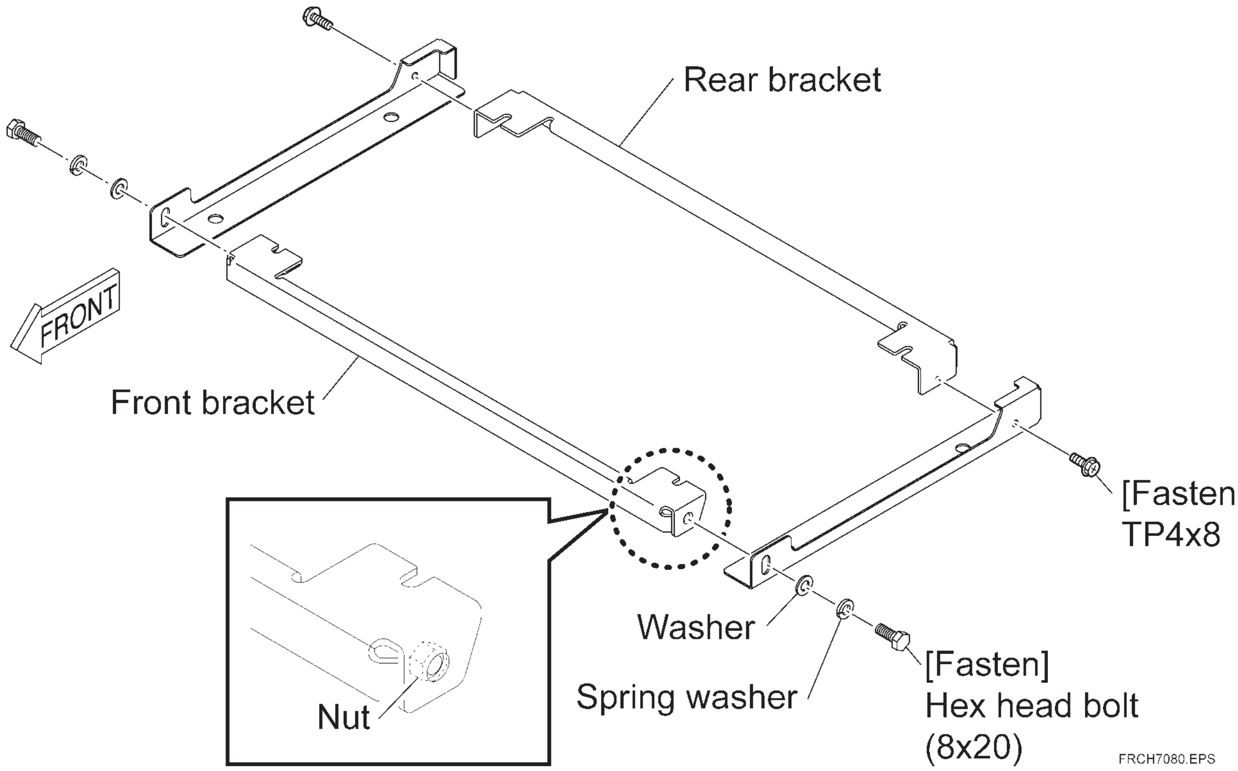
1. **Assemble the anti-topple retainer to determine the locations where the anchor nuts are to be embedded.**

◇ *REFERENCE* ◇

The front bracket (for use on the front face) and the rear bracket (for use on the rear face) of the anti-topple retainer have different shapes. Although they are of similar shapes when viewed from the surface, you can distinguish them by checking from the back.

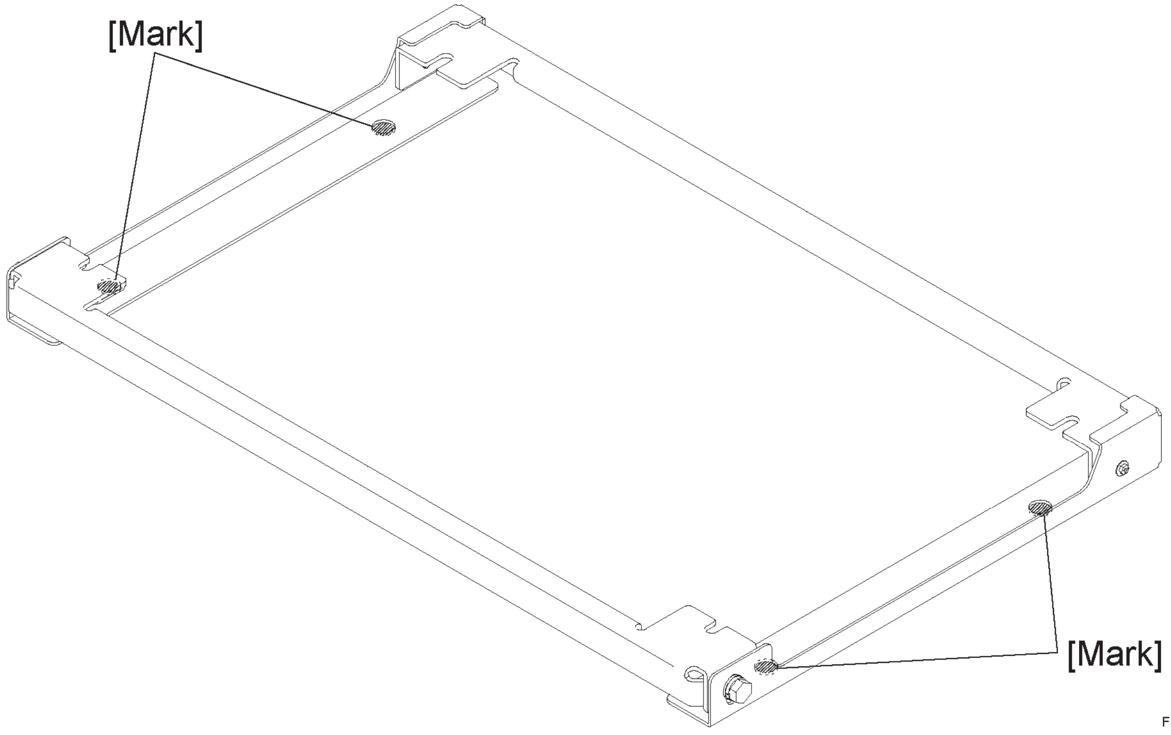
The front bracket has nuts welded on the inner side.

The rear bracket has no nut welded on the inner side.


Rear bracket
FRONT
Front bracket
Nut
Washer
Spring washer
[Fasten]
TP4x8
[Fasten]
Hex head bolt
(8x20)

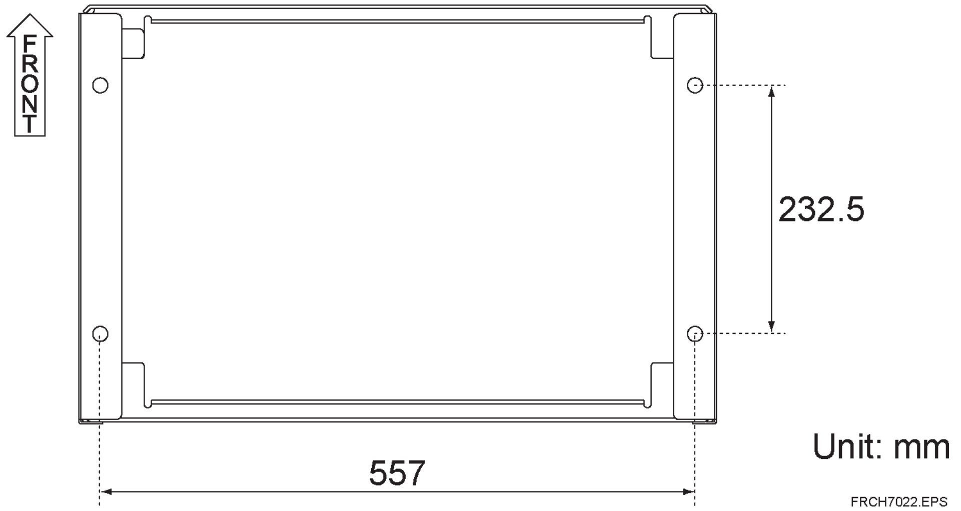
FRCH7080.EPS

2. **Place the assembled anti-topple retainer on the location where the machine is to be settled. While holding not to cause the anti-topple retainer to shift, mark the locations where the holes for embedding the anchor nuts are to be bored with a pen or the like.**



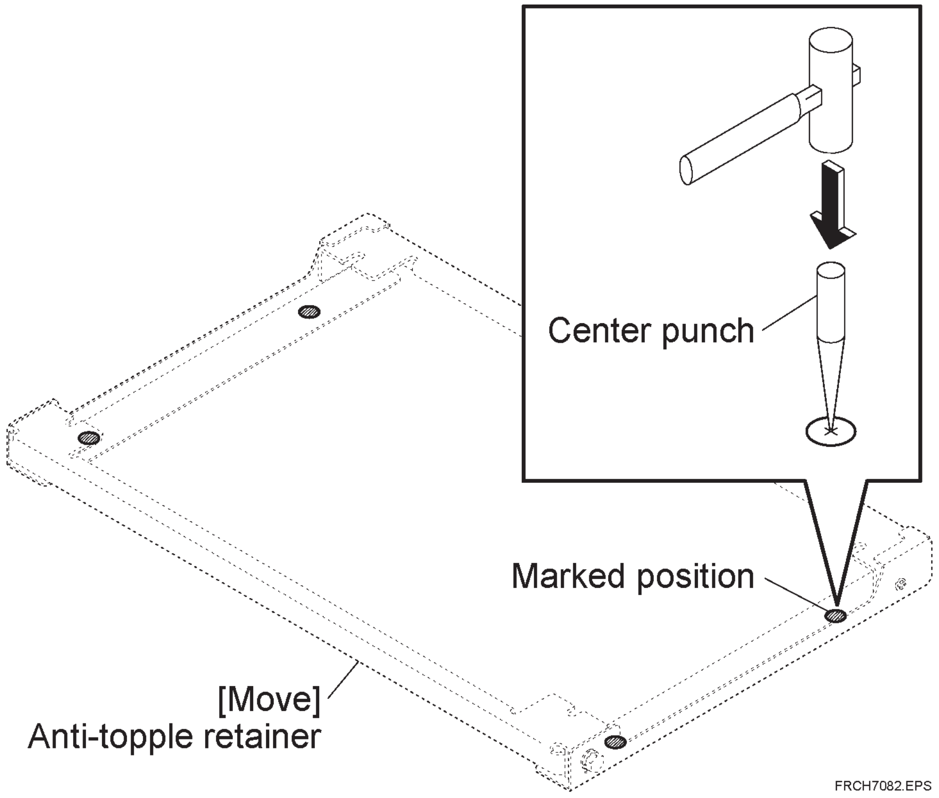
FRCH7081.EPS

<Reference value>


FRONT
232.5
557
Unit: mm

FRCH7022.EPS

3. **Once move the anti-topple retainer. Strike a center punch at the center of a marked position to easily drill a hole.**


Center punch
Marked position
[Move]
Anti-topple retainer
FRCH7082.EPS

4. **Drill holes with a diameter of 12.5 mm and a depth of 35 mm at the four marked positions.**

⚠ **CAUTION**

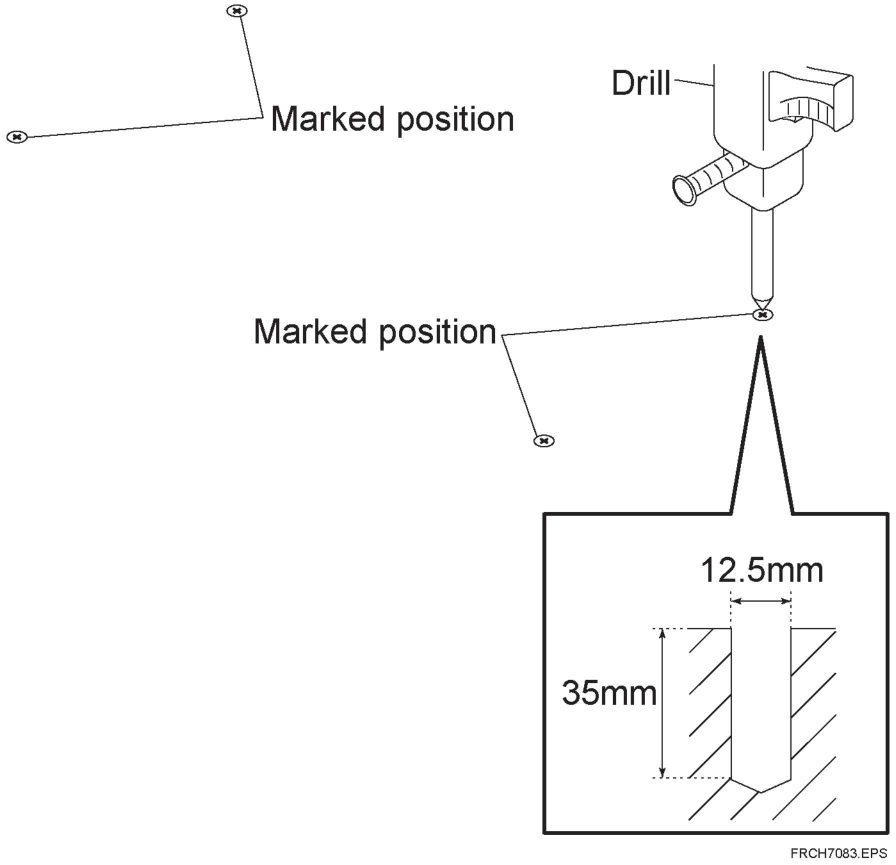
When drilling a hole, wear protective goggles. Drilled chips might scatter.

◆ **NOTE** ◆

When drilling a hole, exercise care not to tilt the drill. If the drill is tilted, the anchor nut cannot be embedded straight. As a result, there is possibility that the anti-topple retainer cannot be correctly retained.

◇ *REFERENCE* ◇

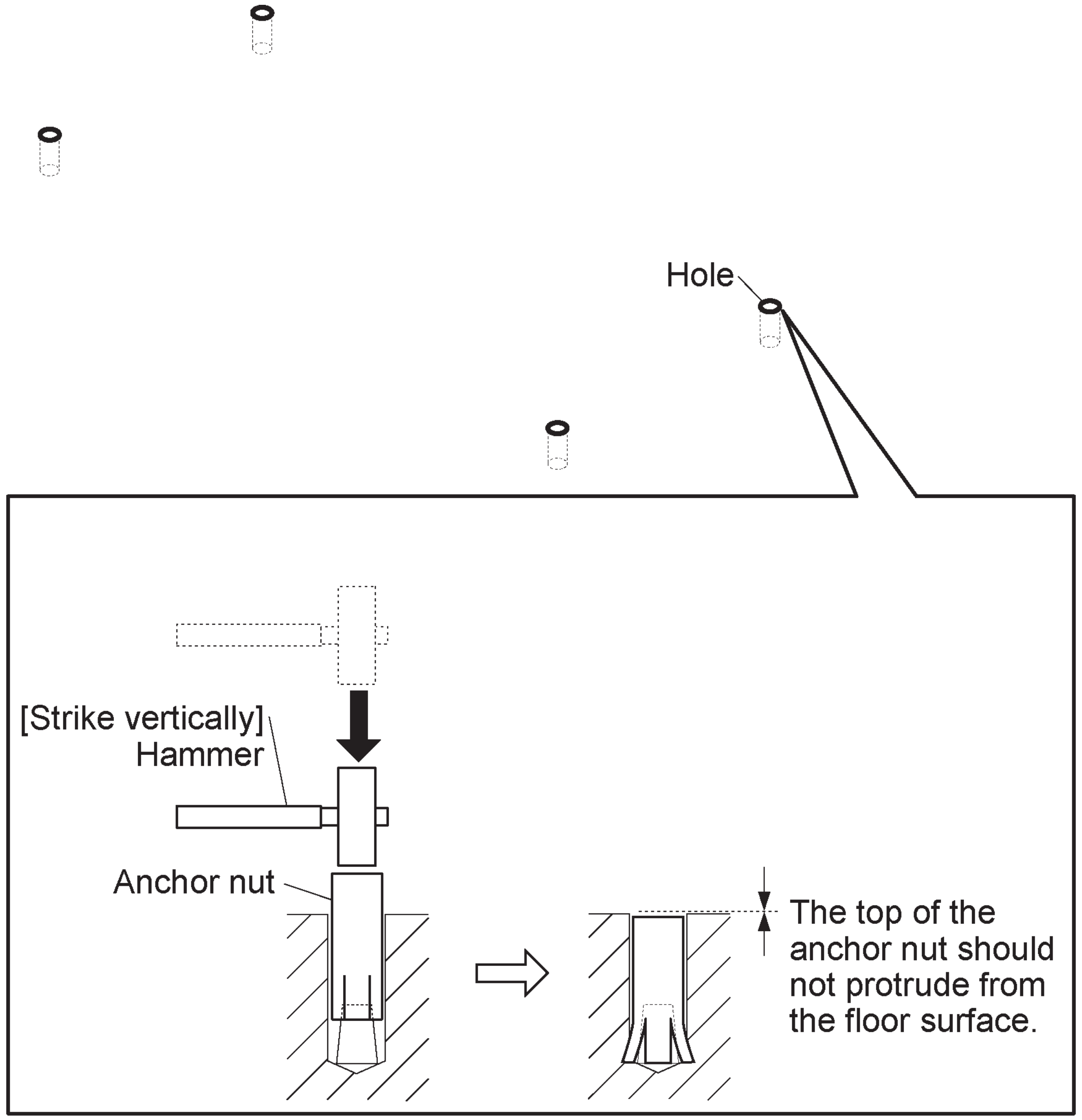
When drilling a hole, use of a vacuum cleaner is recommended. If the hole is drilled while sucking the chips by the vacuum cleaner, the depth of the hole can be easily checked.


Marked position
Drill
Marked position
12.5mm
35mm
FRCH7083.EPS

5. **Strike the anchor nut by a hammer to embed the nut into the four drilled holes.**

◆ *NOTES* ◆

- *When embedding the anchor nut, strike the top of the anchor nut vertically to the nut. If the top of the anchor nut deforms, the bolt for retaining the bracket cannot be installed.*
- *Embed the anchor nut until its top does not protrude from the floor surface.*

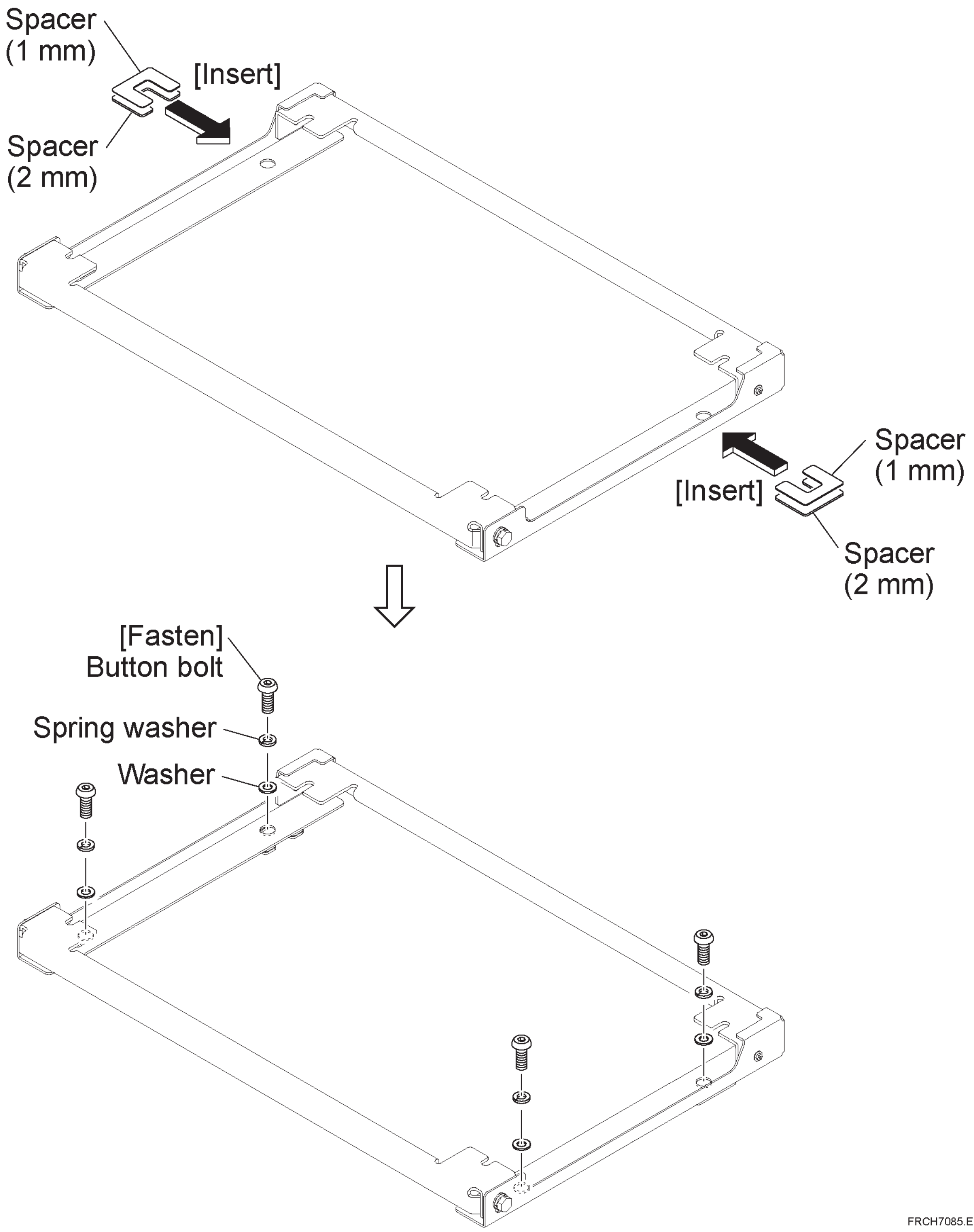

Hole
[Strike vertically]
Hammer
Anchor nut
The top of the anchor nut should not protrude from the floor surface.

FRCH7084.EPS

6. **Place the anti-topple retainer in place. Put in spacers with thicknesses of 1 mm and 2 mm into the bolt retaining positions on the rear side, and temporarily retain the retainer with the button bolts.**

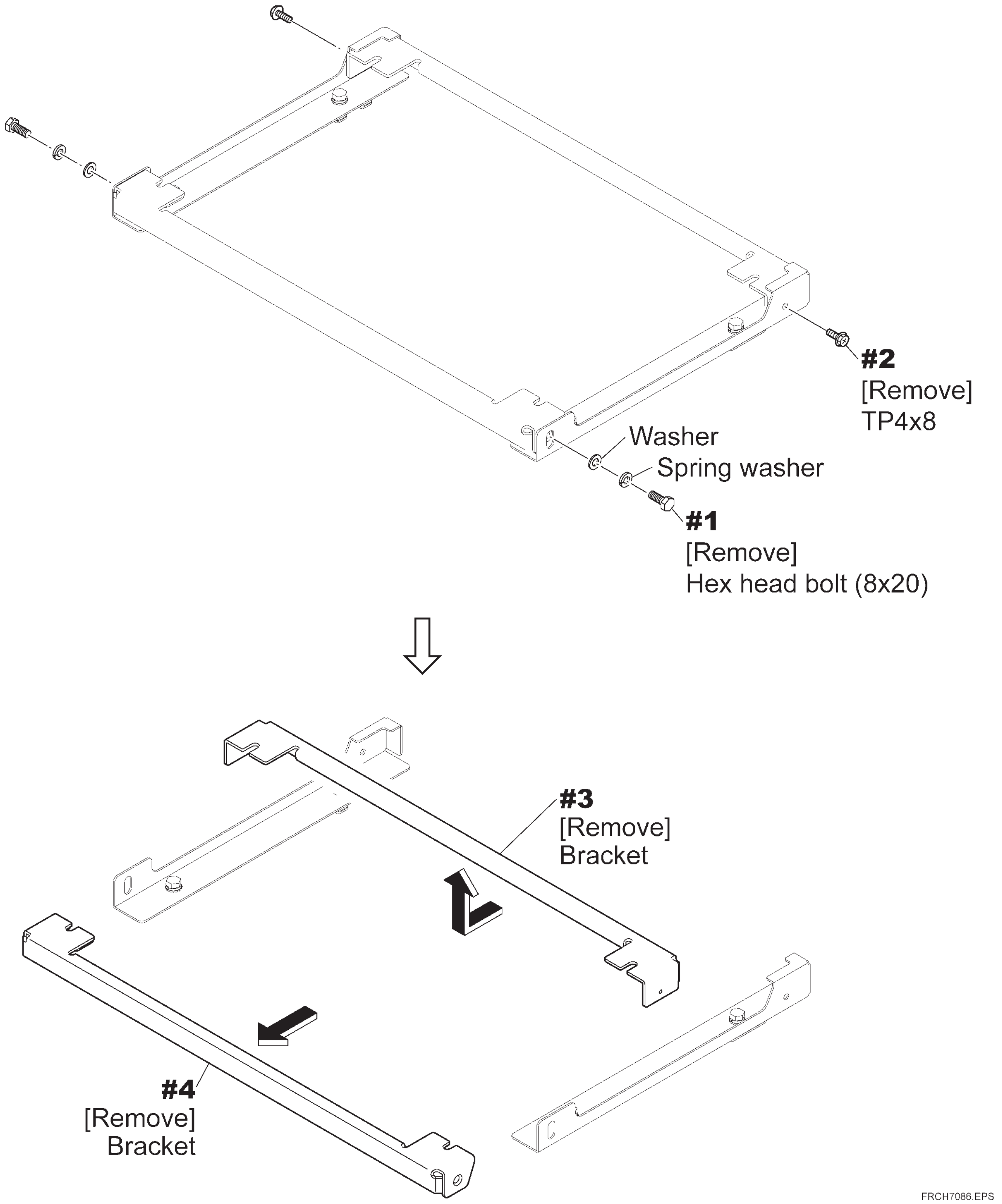
◆ *NOTE* ◆

Be sure to use the button bolt as a bolt to retain the anti-topple retainer. If a common bolt is used, the bolt head and the adjustable foot might come into contact when the machine is moved, causing deformation on the adjustable foot.


Spacer
(1 mm)
[Insert]
Spacer
(2 mm)
Spacer
(1 mm)
[Insert]
Spacer
(2 mm)
[Fasten]
Button bolt
Spring washer
Washer

FRCH7085.EPS

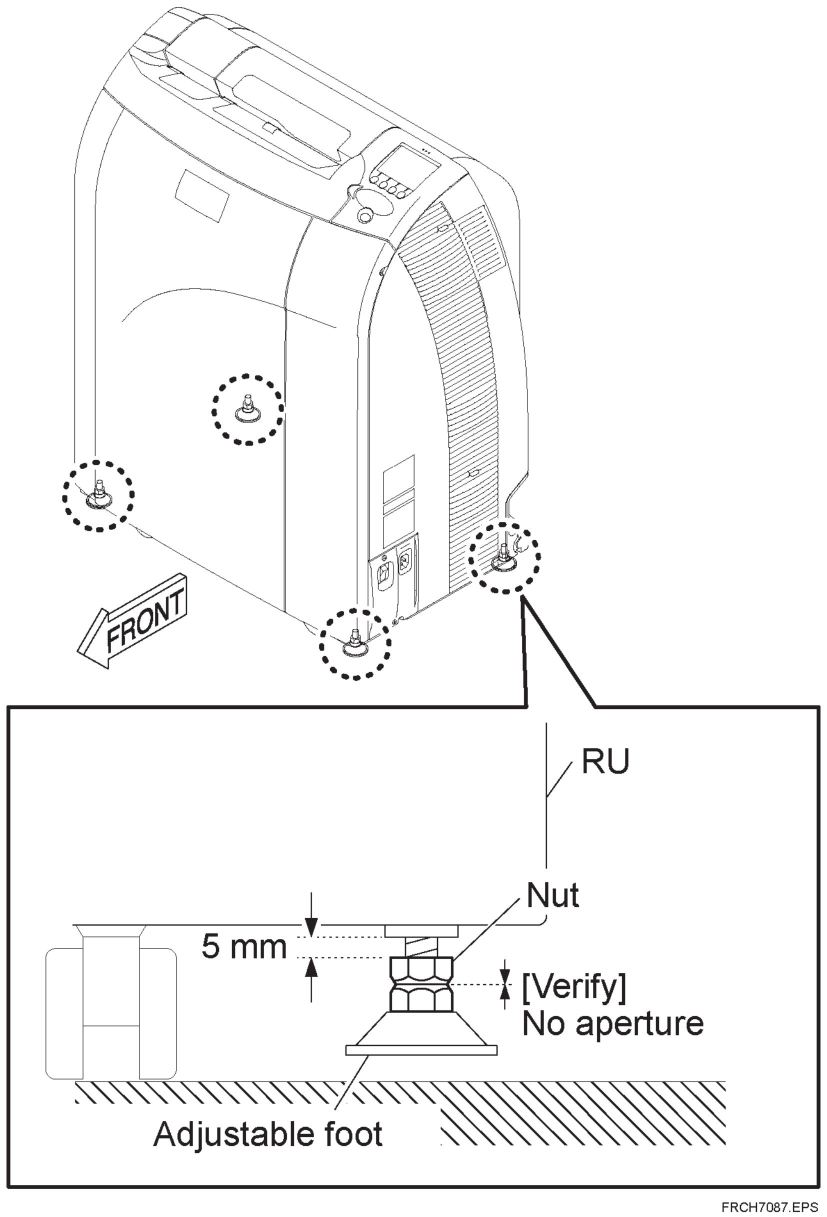
7. **Remove the hex head bolts and the screws to remove the bracket.**


#2
[Remove]
TP4x8
Washer
Spring washer
#1
[Remove]
Hex head bolt (8x20)
#3
[Remove]
Bracket
#4
[Remove]
Bracket
FRCH7086.EPS

8. **Adjust the height of the adjustable foot so that a distance from the upper surface of the nut of the adjustable foot to the bottom of the machine is approx. 5 mm, in order to mount the bracket on the machine. After the adjustment, check to make sure that there is no aperture between the two nuts of the adjustable foot.**

◆ **NOTE** ◆

Check to make sure that there is no aperture between the two nuts of the adjustable foot. If there is an aperture between the nuts, the machine retaining bracket cannot be fixed properly.


FRONT
RU
Nut
5 mm
[Verify]
No aperture
Adjustable foot
FRCH7087.EPS

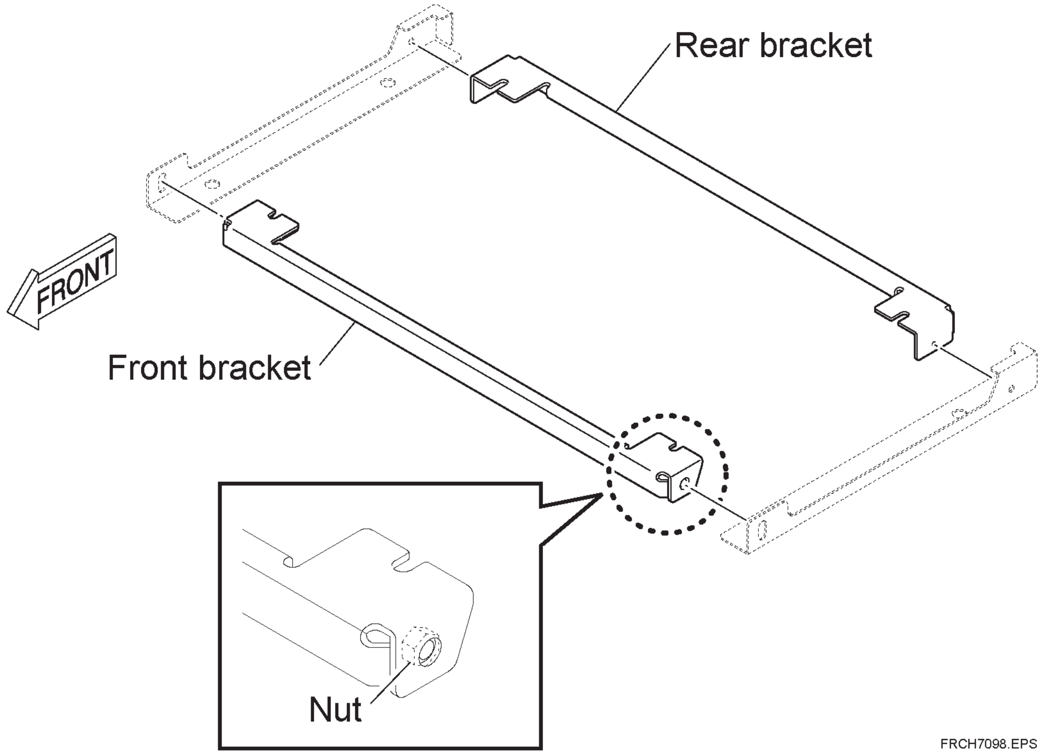
9. **Insert the rear bracket from the rear of the machine between the nut of the adjustable foot and the bottom of the machine. While pushing the bracket against the machine, fasten the nut of the adjustable foot for retaining.**

◆ *NOTES* ◆

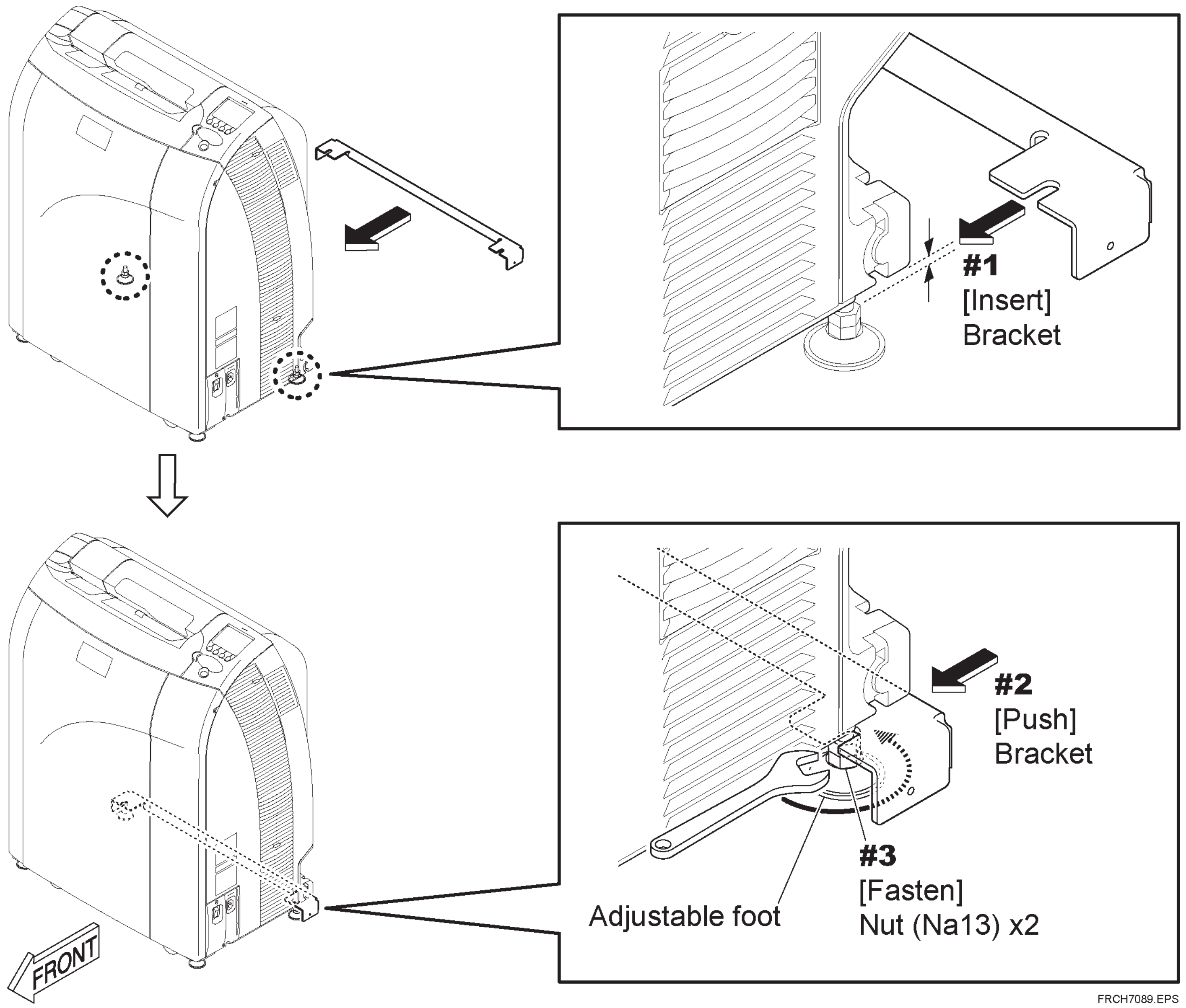
- *Be sure to fasten the nut while pushing the bracket against the machine. If the bracket is pushed insufficiently, the machine may not be able to be properly retained.*
- *When fastening the nut of the adjustable foot, exercise care not to cause an aperture between the two nuts. The bracket might not be able to be properly retained.*

◇ *REFERENCE* ◇

The front bracket (for use on the front face) and the rear bracket (for use on the rear face) of the anti-topple retainer have different shapes. Although they are of similar shapes when viewed from the surface, you can distinguish them by checking from the back.
The front bracket has nuts welded on the inner side.
The rear bracket has no nut welded on the inner side.



FRCH7098.EPS

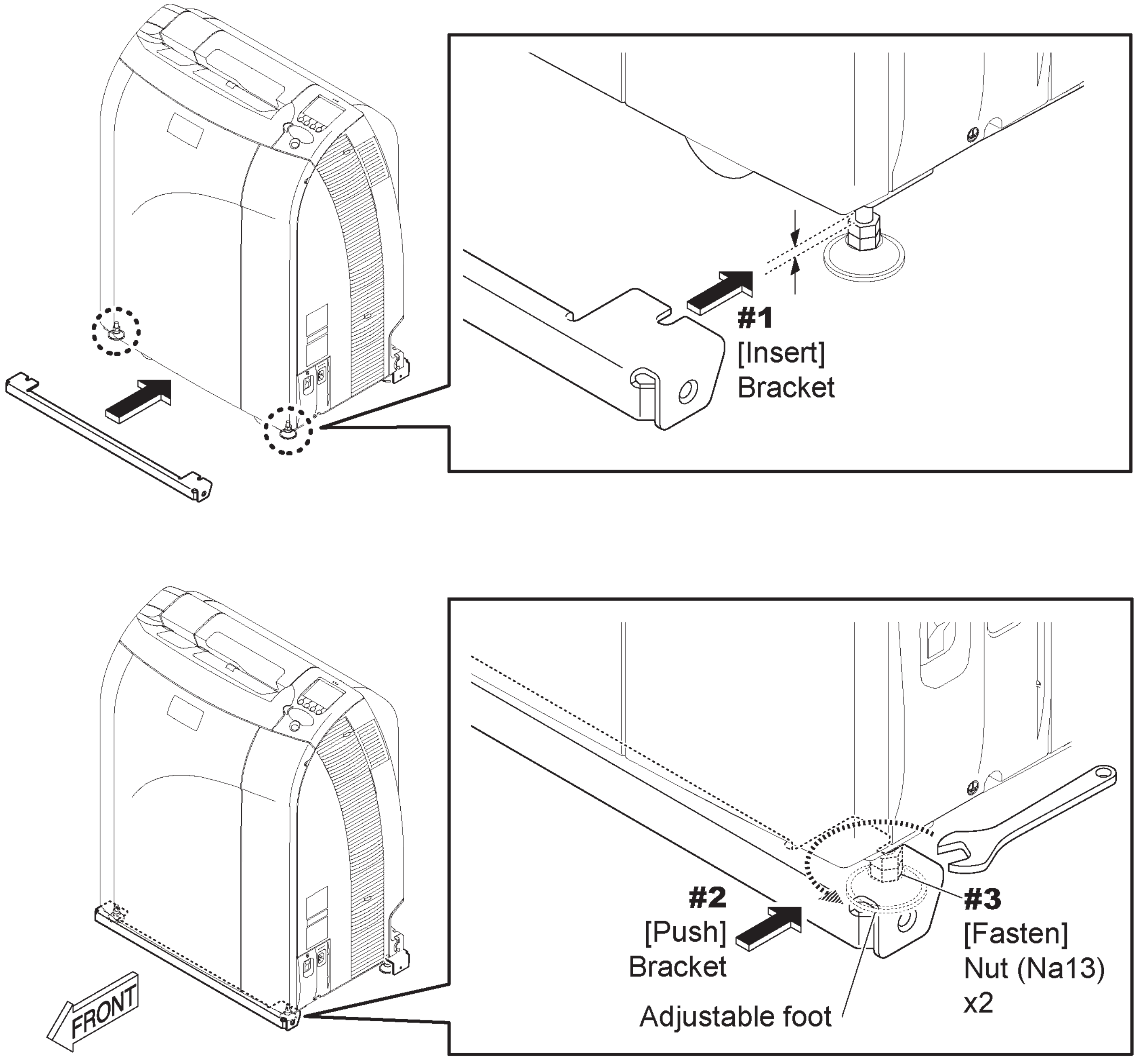


FRCH7089.EPS

10. **Insert the front bracket from the front of the machine between the nut of the adjustable foot and the bottom of the machine. While pushing the bracket against the machine, fasten the nut of the adjustable foot for retaining.**

◆ ***NOTES*** ◆

- *Be sure to fasten the nut while pushing the bracket against the machine. If the bracket is pushed insufficiently, the machine may not be able to be properly retained.*
- *When fastening the nut of the adjustable foot, exercise care not to cause an aperture between the two nuts. The bracket might not be able to be properly retained.*

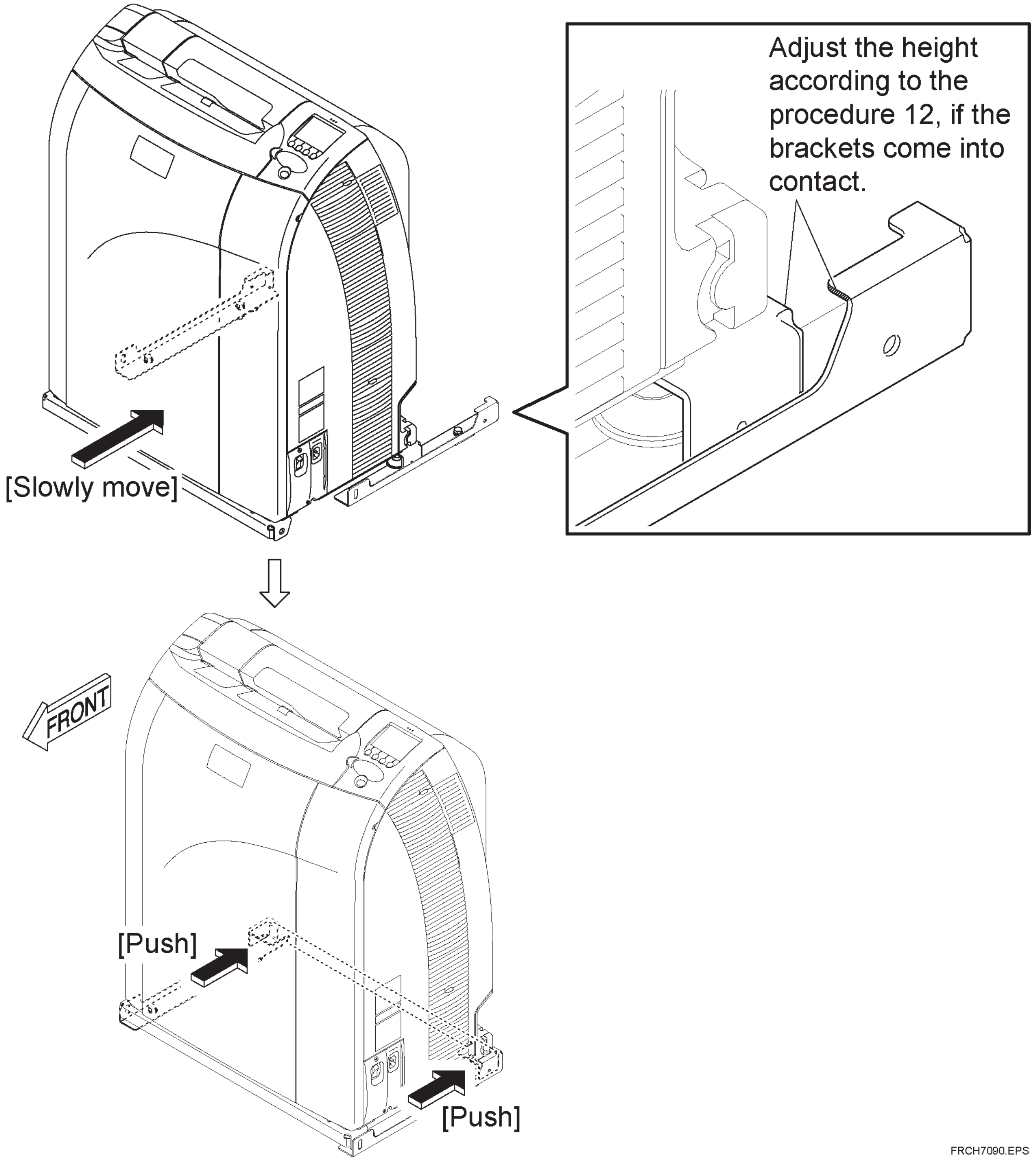

#1
[Insert]
Bracket
FRONT
#2
[Push]
Bracket
Adjustable foot
#3
[Fasten]
Nut (Na13)
x2

FRCH7088.EPS

11. **Slowly move the machine toward the bracket retained on the floor, until the bracket on the rear of the machine comes against the bracket retained on the floor.**

◆ ***NOTES*** ◆

- *If the machine cannot be moved as the bracket retained on the bracket comes into contact with the bracket mounted on the machine when the machine is to be moved, height adjustment is necessary with additional spacers. Take the procedure 12.*
- *If the machine can move until the bracket on the rear of the machine comes against the bracket retained on the floor, the procedure 12 need not be taken. Proceed to the procedure 13.*

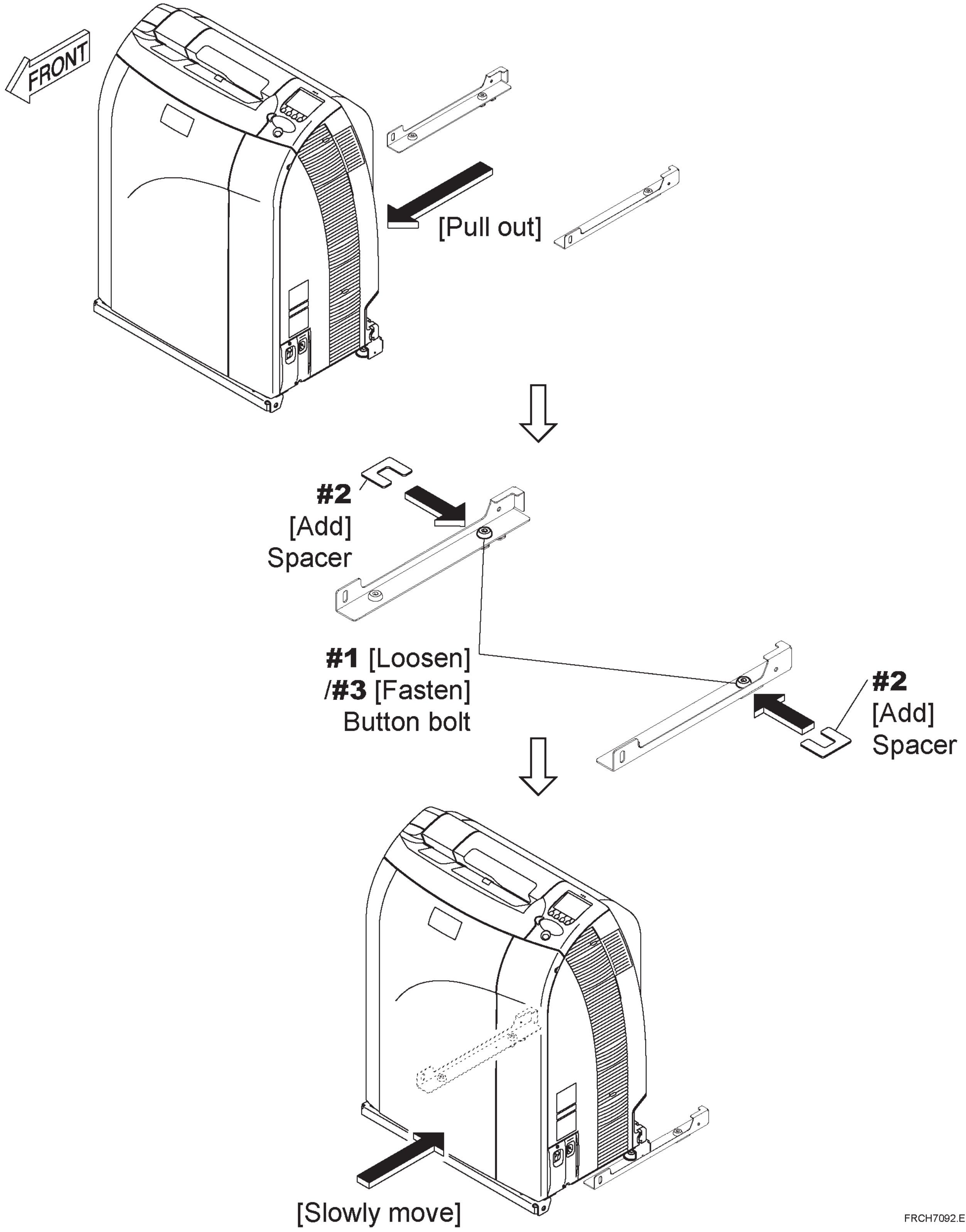

Adjust the height according to the procedure 12, if the brackets come into contact.
[Slowly move]
FRONT
[Push]
[Push]

FRCH7090.EPS

12. **Once pull out the machine. Adjust the height of the bracket retained on the floor by adding a spacer. Then move the machine again.**

◆ NOTE ◆

Check the portion where the bracket retained on the floor is in contact wit the bracket on the rear of the machine. Add a spacer of 1mm or 2mm thickness accordingly.

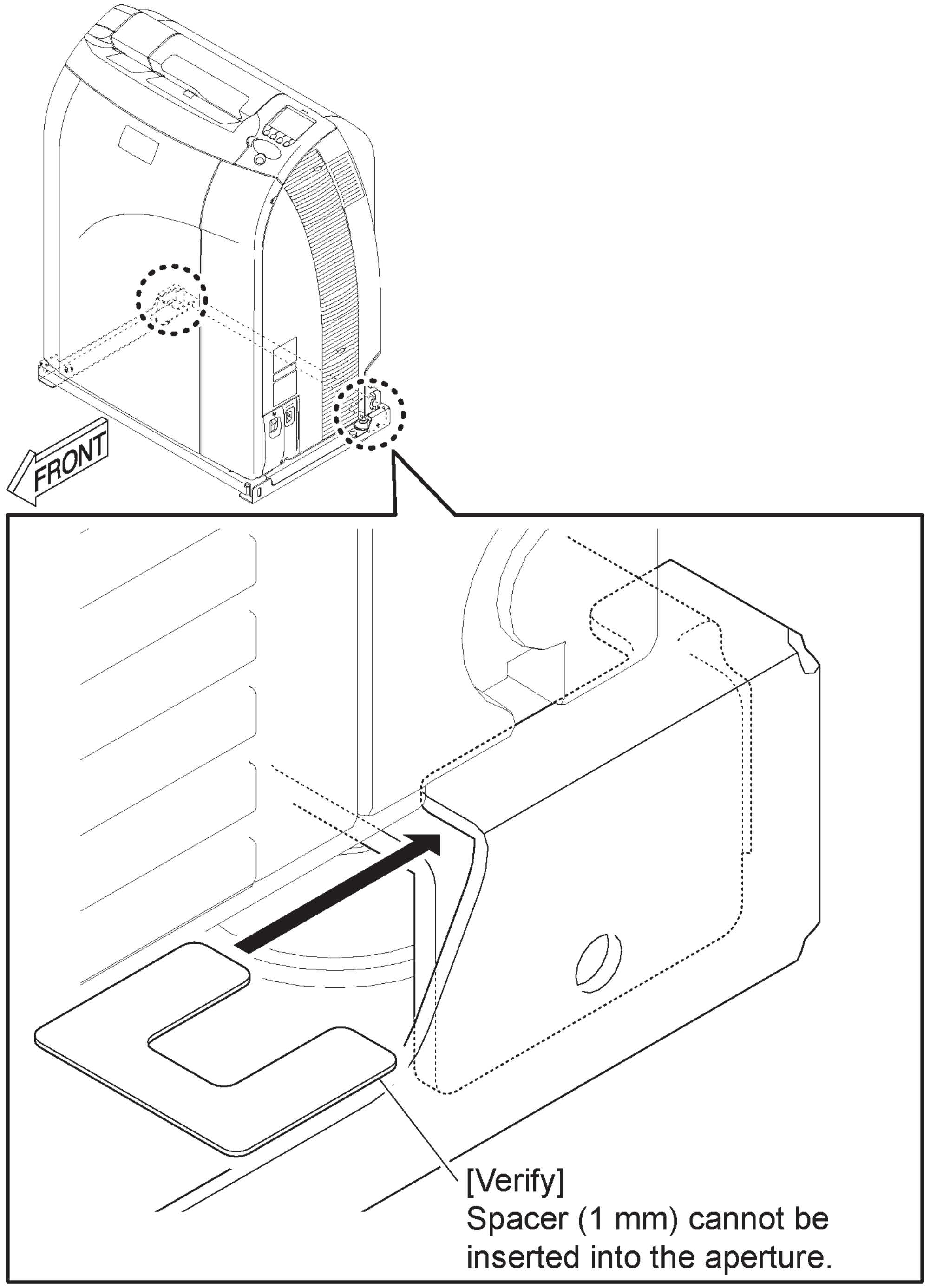

FRONT
[Pull out]
#2
[Add]
Spacer
#1 [Loosen]
/#3 [Fasten]
Button bolt
#2
[Add]
Spacer
[Slowly move]

FRCH7092.EPS

13. **Check to make sure that the spacer of 1mm thickness cannot be inserted into an aperture between the bracket retained on the floor and the bracket mounted on the machine.**

◆ NOTES ◆

- *If the spacer of 1mm thickness can be inserted into an aperture between the bracket retained on the floor and the bracket mounted on the machine, the spacer should be removed and the height need be adjusted again. Take the procedure 14.*
- *If the spacer of 1mm thickness cannot be inserted into an aperture between the bracket retained on the floor and the bracket mounted on the machine, the procedure 14 need not be taken. Proceed to the procedure 15.*

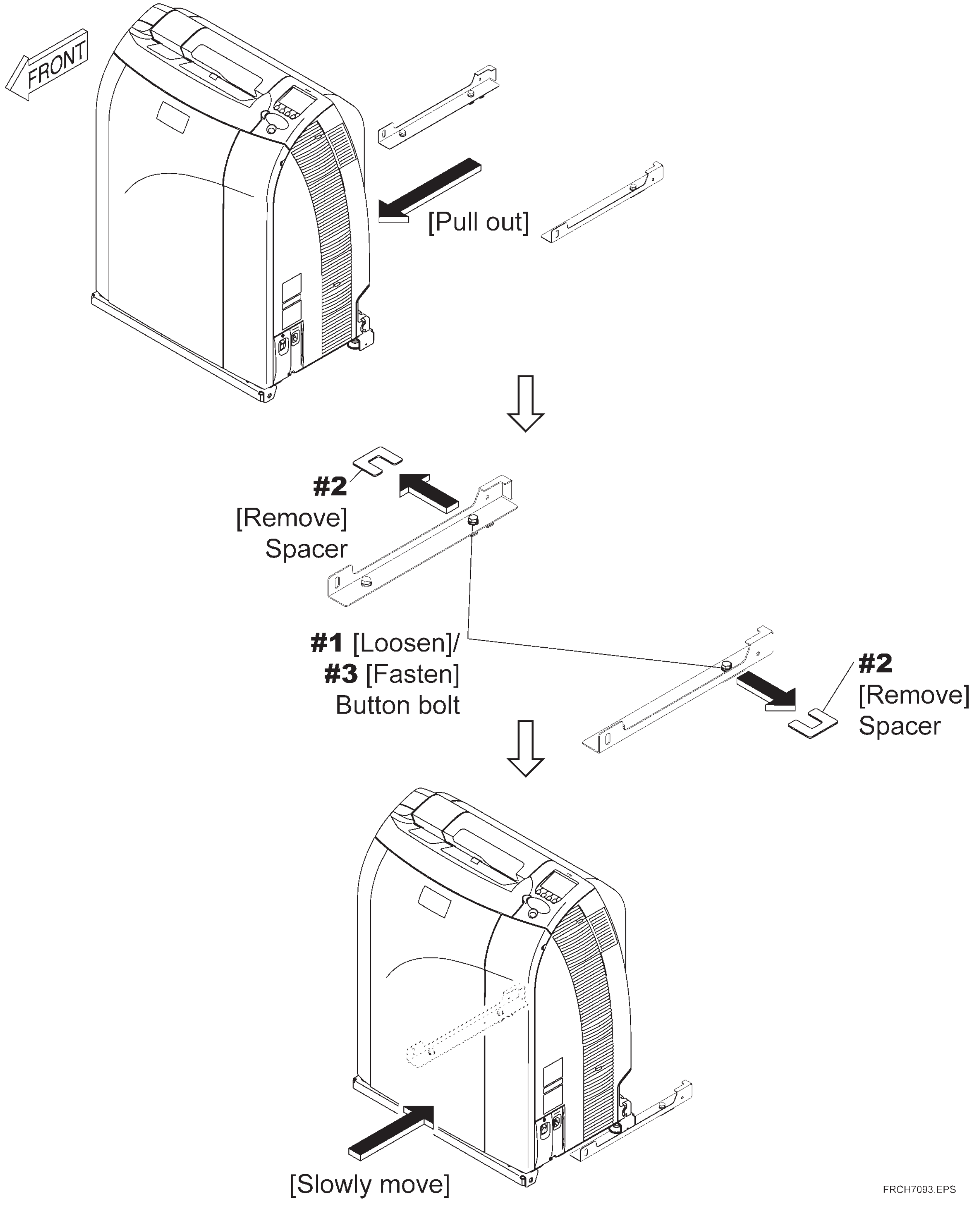

FRONT
[Verify]
Spacer (1 mm) cannot be
inserted into the aperture.

FRCH7096.EPS

14. **Once pull out the machine. Loosen the button bolt, remove the spacer, and fasten the button bolt to retain the bracket. After the bracket is retained, move the machine, and again check as instructed in the procedure 13.**

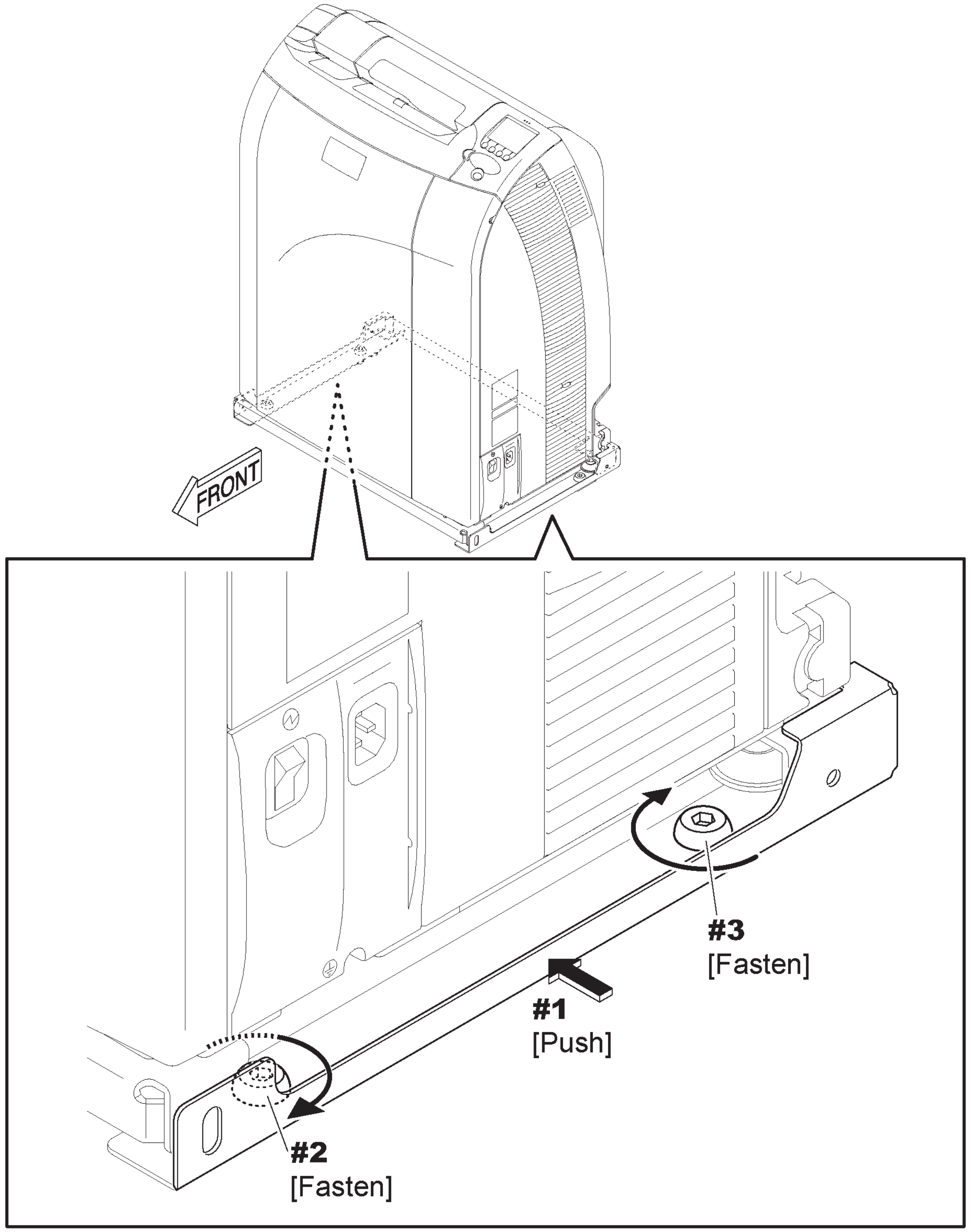
◆ ***NOTE*** ◆

When the spacer is removed, always take the procedure 13 to check the aperture.


FRONT
[Pull out]
#2
[Remove]
Spacer
#1 [Loosen]/
#3 [Fasten]
Button bolt
#2
[Remove]
Spacer
[Slowly move]

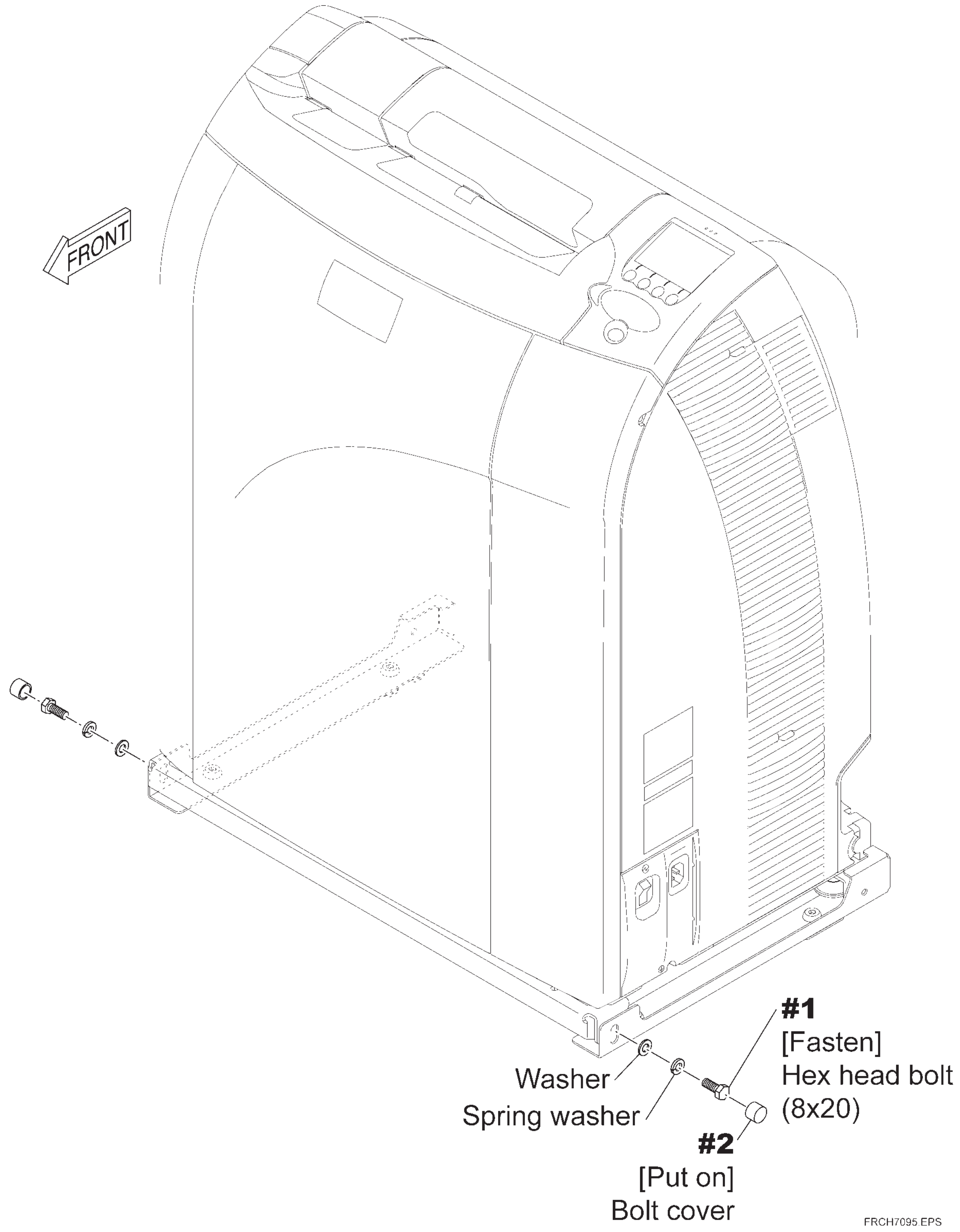
FRCH7093.EPS

15. **While pushing the bracket retained on the floor against the machine, additionally fasten the button bolt to retain the bracket mounted on the floor. When the bracket retained on the floor does not move, once loosen the button bolt, push the bracket against the machine, and fasten the button nut to retain the bracket on the floor.**


FRONT
#3
[Fasten]
#1
[Push]
#2
[Fasten]

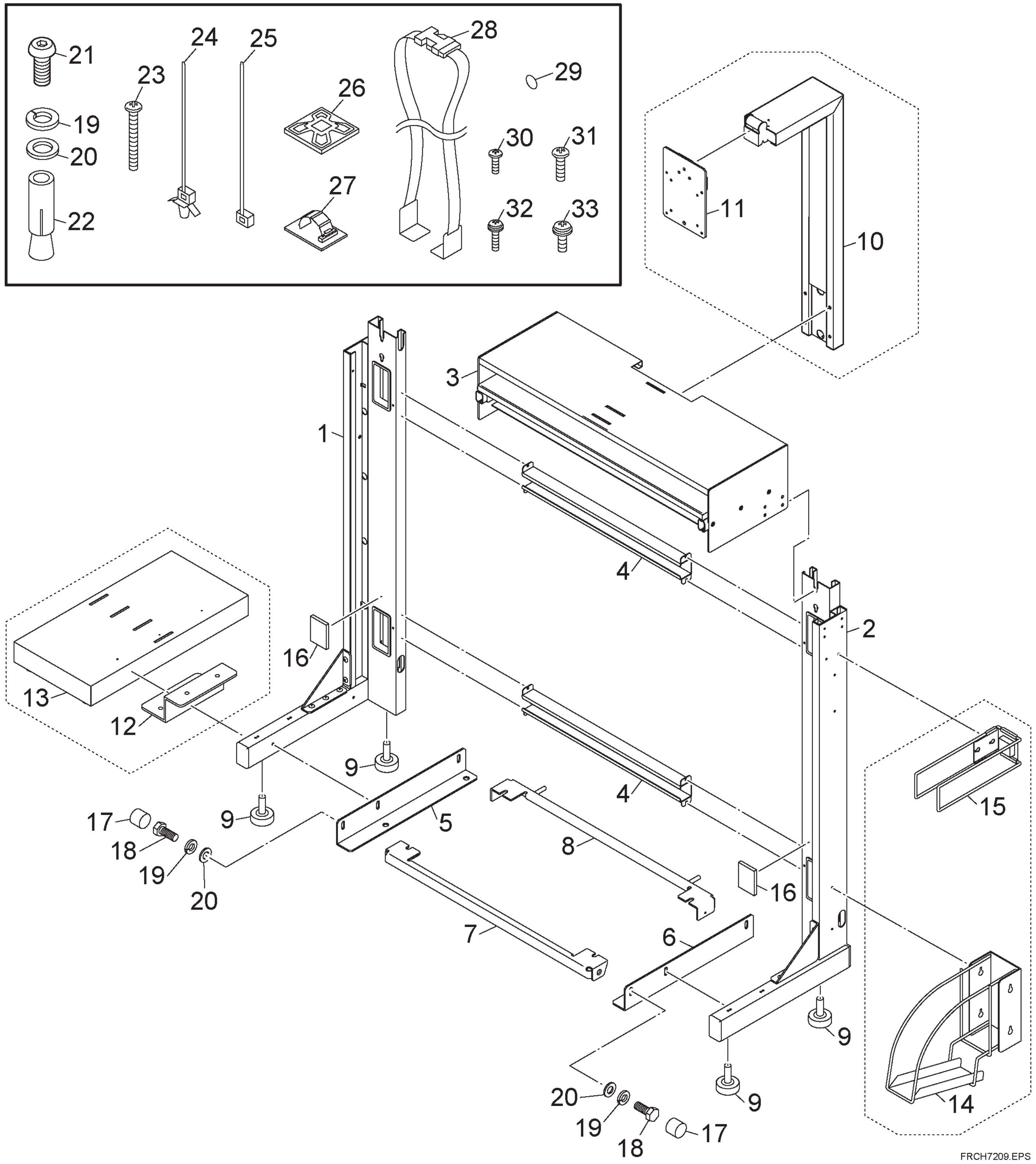
FRCH7094.EPS

16. **Put on the bolt on the front of the machine, retain the bracket, and put on the bolt cover.**


FRONT
#1
[Fasten]
Hex head bolt
(8x20)
Washer
Spring washer
#2
[Put on]
Bolt cover
FRCH7095.EPS

Appendix 3 Assembling and Securing the Supporter

1. Components of the Supporter



■ Supporter Body

No.	Name	Qty.	Remarks
1	Stanchion (left-hand side)	1	
2	Stanchion (right-hand side)	1	
3	Shelf	1	
4	Connecting strut	2	
5	Bracket (left-hand side)	1	
6	Bracket (right-hand side)	1	
7	Bracket (front)	1	
8	Bracket (rear)	1	
9	Adjustable foot	4	

■ Arm Options

No.	Name	Qty.	Remarks
10	Arm	1	
11	Bracket	1	

■ Base Options

No.	Name	Qty.	Remarks
12	Connecting bracket	1	
13	Base	1	

■ Cassette Rack Options

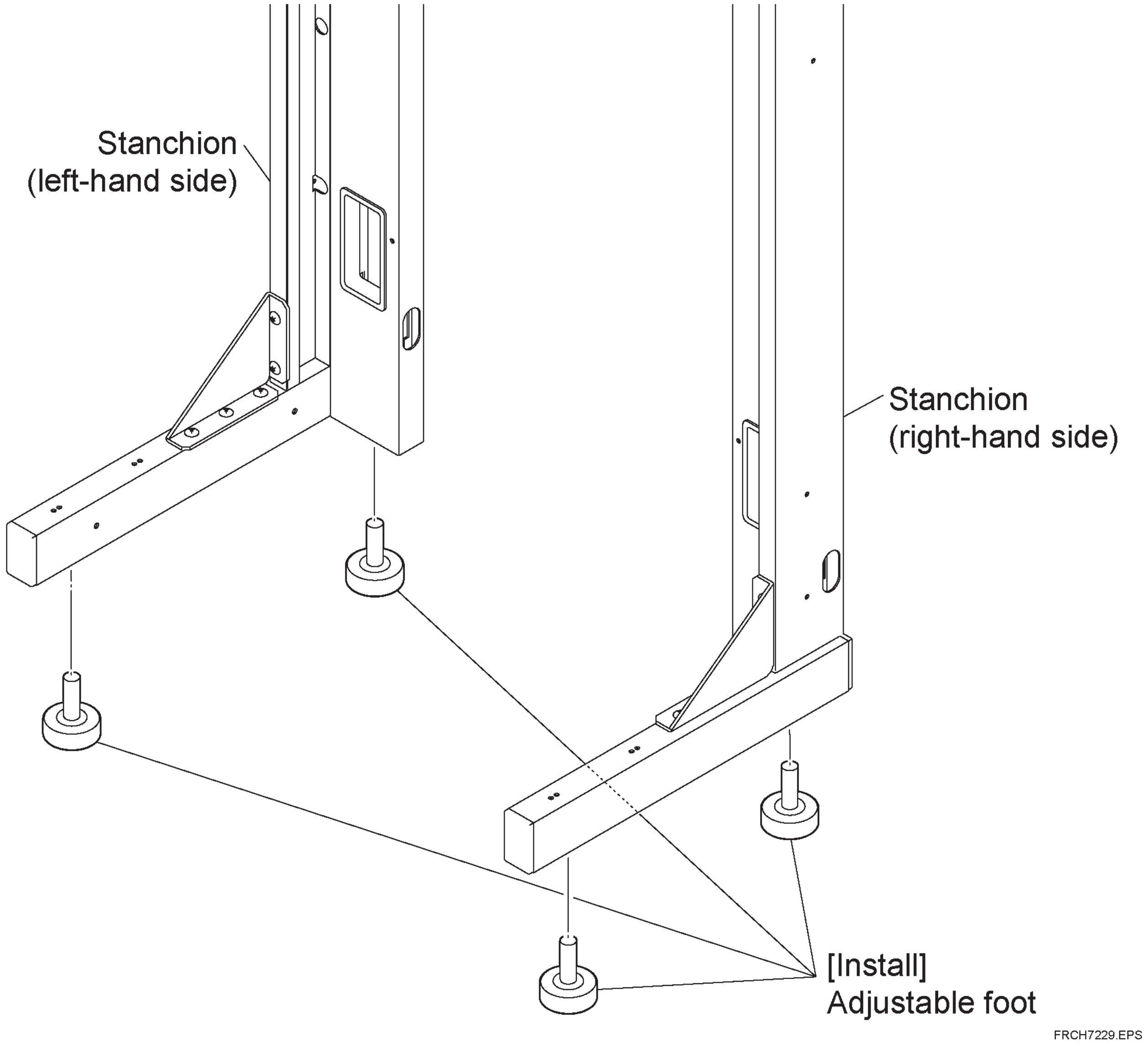
No.	Name	Qty.	Remarks
14	Cassette rack	1	
15	Cassette rack (for long cassette)	1	

■ Optional Items

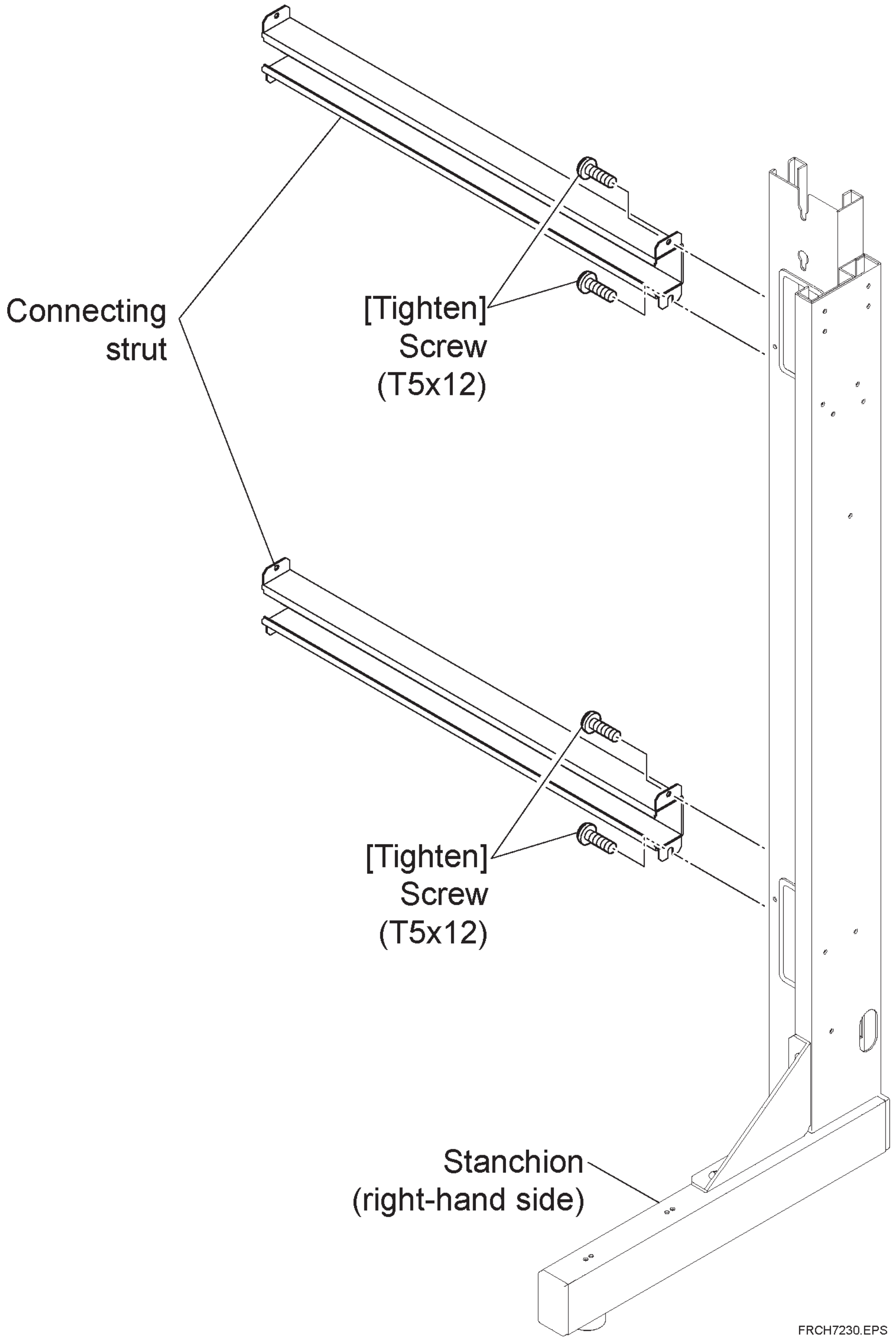
No.	Name	Qty.	Remarks
16	Shock absorber	4	
17	Cap	2	
18	Hex head bolt (8x20)	2	
19	Spring washer (SW8)	2	For supporter body
		4	For retaining the anchor
20	Plain washer (W8)	2	For supporter body
		4	For retaining the anchor
21	Hex socket head button bolt (8x20)	4	For retaining the anchor
22	Anchor nut (Na8)	4	For retaining the anchor
23	Screw (TP4x40)	4	For fixing to the wall
24	Stem band	4	
25	Insulock	11	
26	Insulock plate	11	
27	NK clamp	10	
28	Retaining band	1	
29	Seal	24	
30	Screw (T5x12)	18	For supporter body
		4	For arm
		4	For base
		2	For cassette rack
		2	For cassette rack (for long cassette)
31	Screw (T6x15)	4	For supporter body
32	W sems screw (B4x12)	4	For arm
33	W sems screw (B5x8)	3	For arm

2. Assembling the Supporter

1. **Attach the adjustable feet to the right- and left-hand stanchions.**


Stanchion
(left-hand side)
Stanchion
(right-hand side)
[Install]
Adjustable foot
FRCH7229.EPS

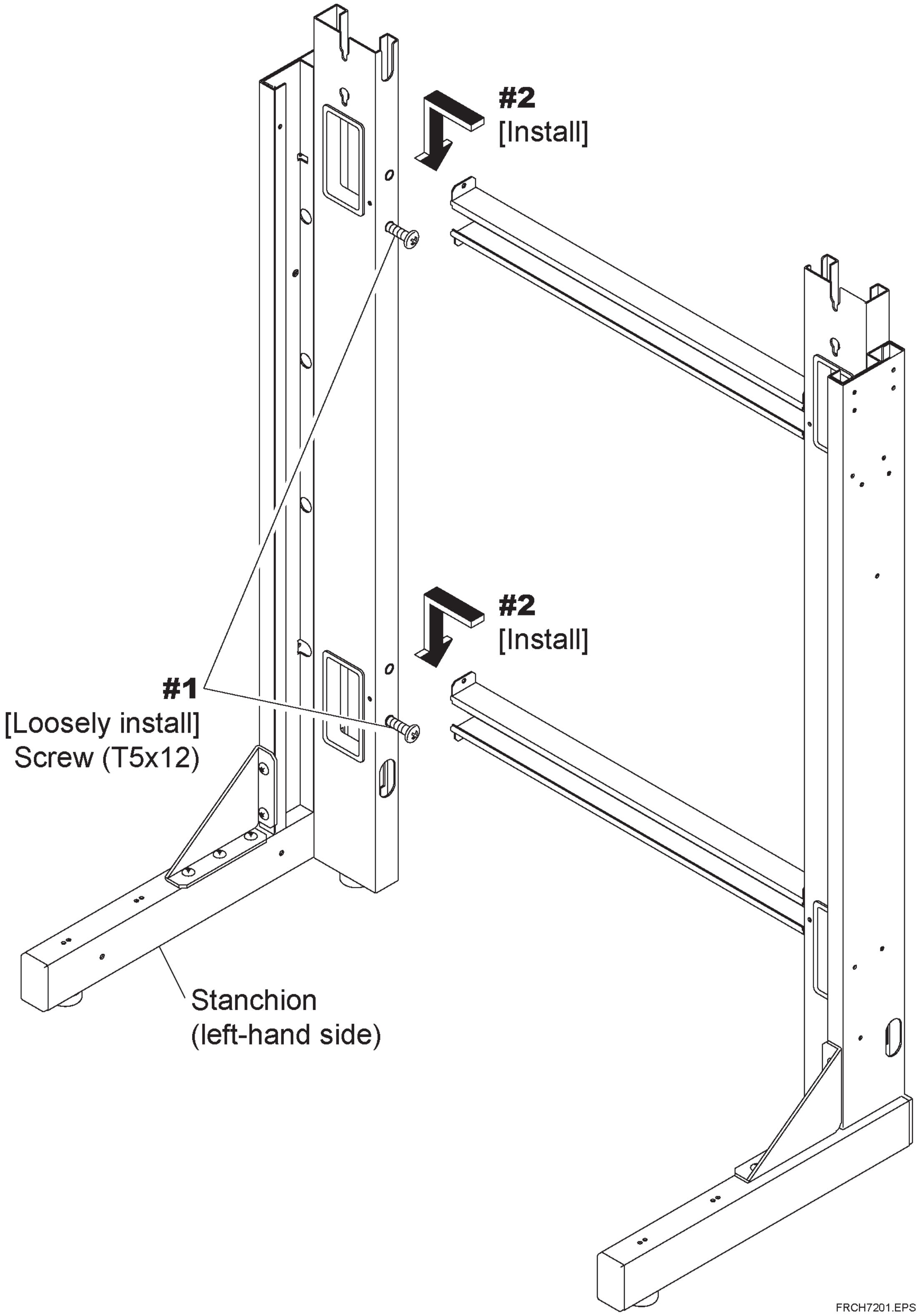
2. **Mount the connecting struts on one of the stanchions.**


Connecting
strut
[Tighten]
Screw
(T5x12)
[Tighten]
Screw
(T5x12)
Stanchion
(right-hand side)
FRCH7230.EPS

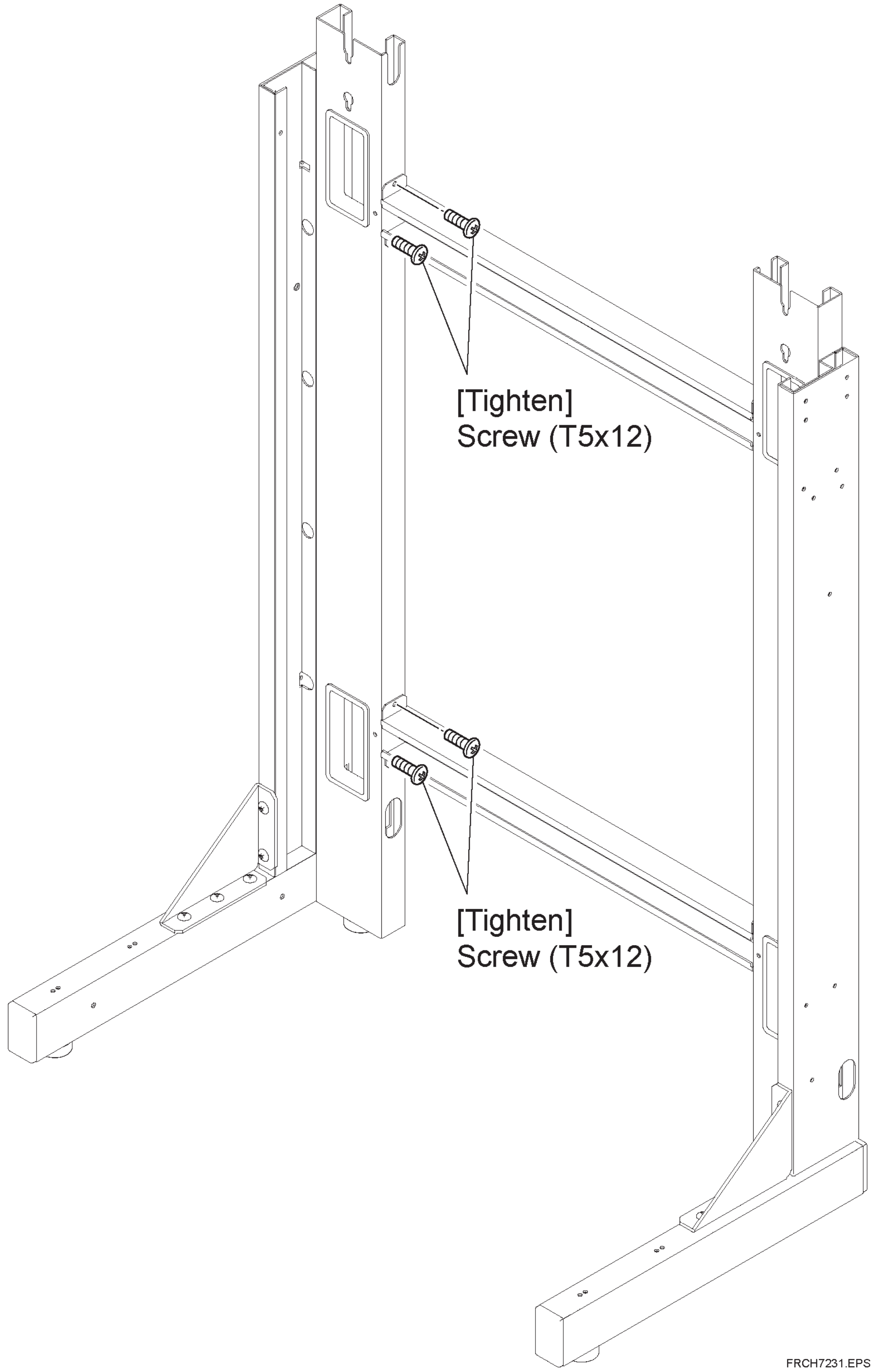
3. **Mount the struts assembled in the step 2 on the other stanchion.**

◆ NOTE ◆

Be sure to mount the struts with the two screws temporarily tightened.


#2
[Install]
#2
[Install]
#1
[Loosely install]
Screw (T5x12)
Stanchion
(left-hand side)
FRCH7201.EPS

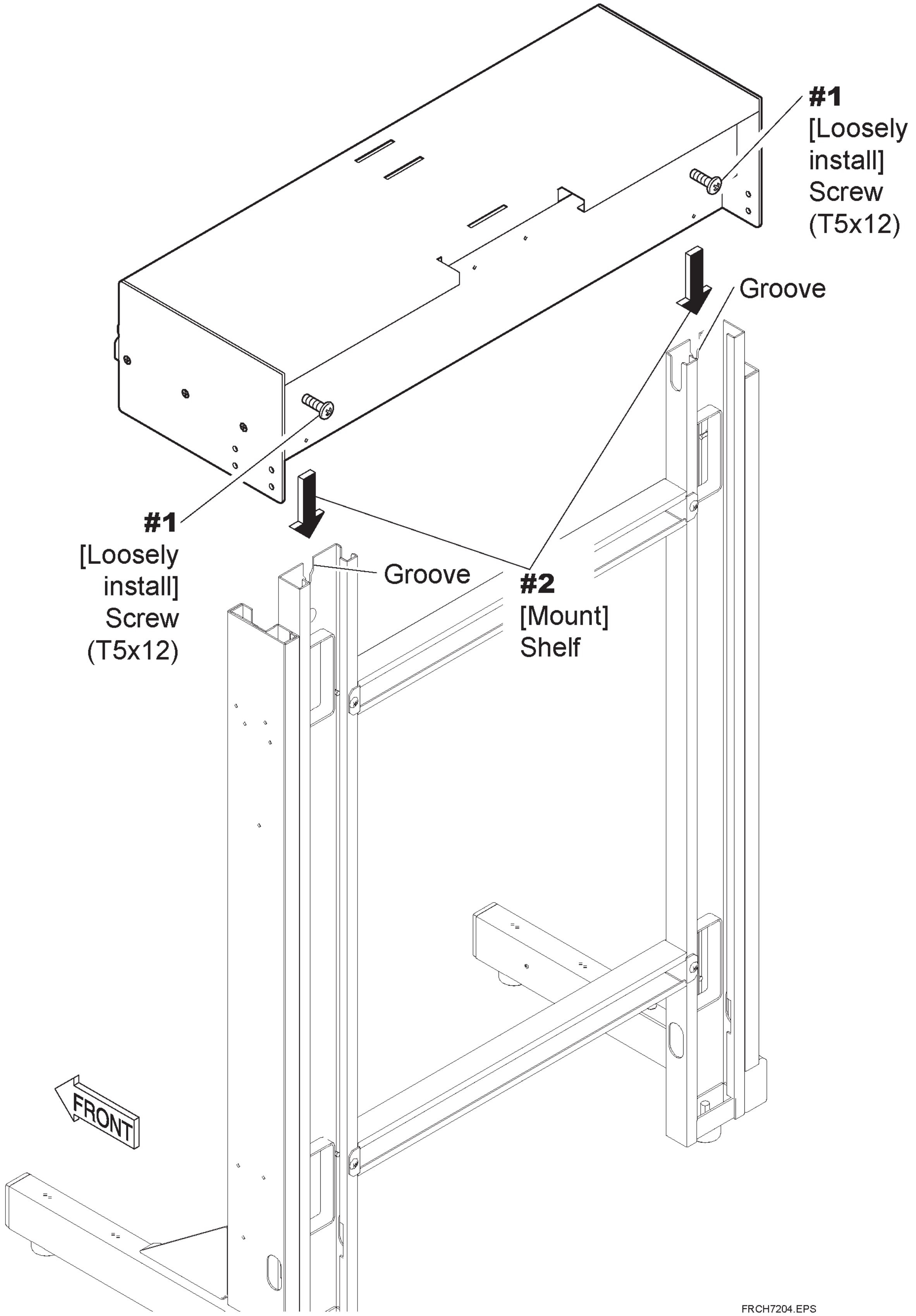
4. **Screw the struts.**


[Tighten]
Screw (T5x12)
[Tighten]
Screw (T5x12)
FRCH7231.EPS

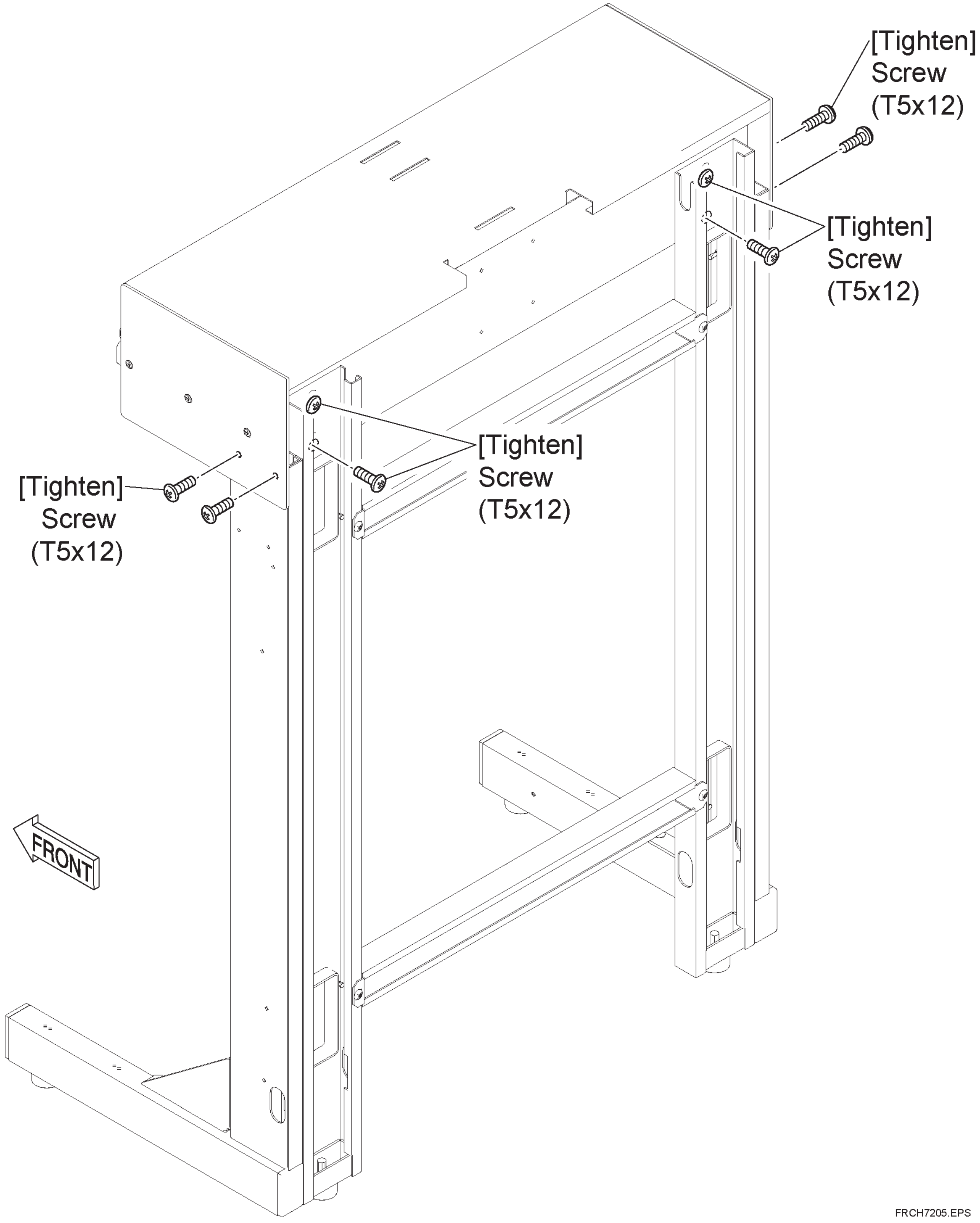
5. **Mount the shelf.**

◆ NOTE ◆

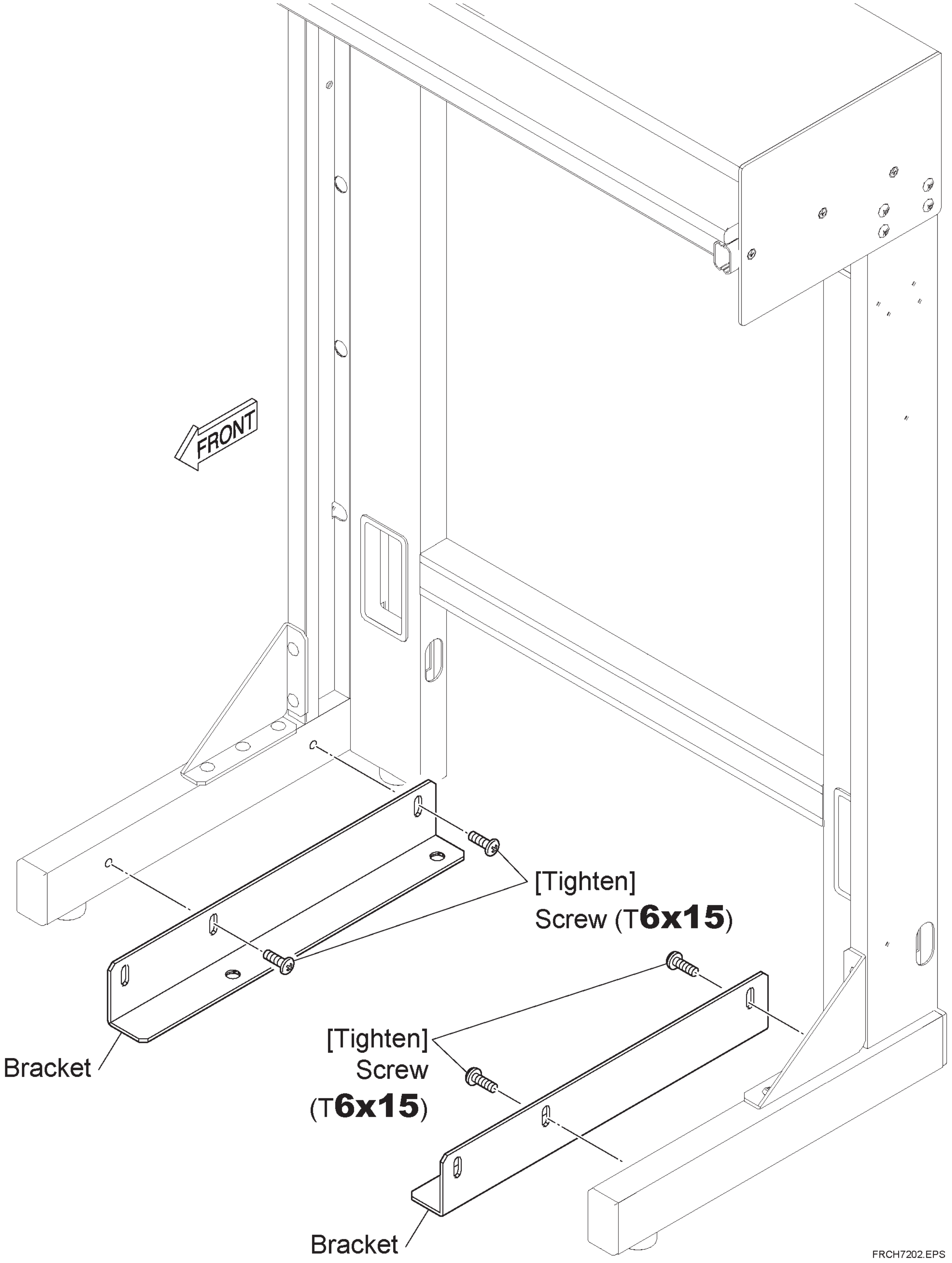
Be sure to mount the shelf with the two screws loosely installed.


#1
[Loosely install]
Screw
(T5x12)
Groove
#1
[Loosely install]
Screw
(T5x12)
Groove
#2
[Mount]
Shelf
FRONT
FRCH7204.EPS

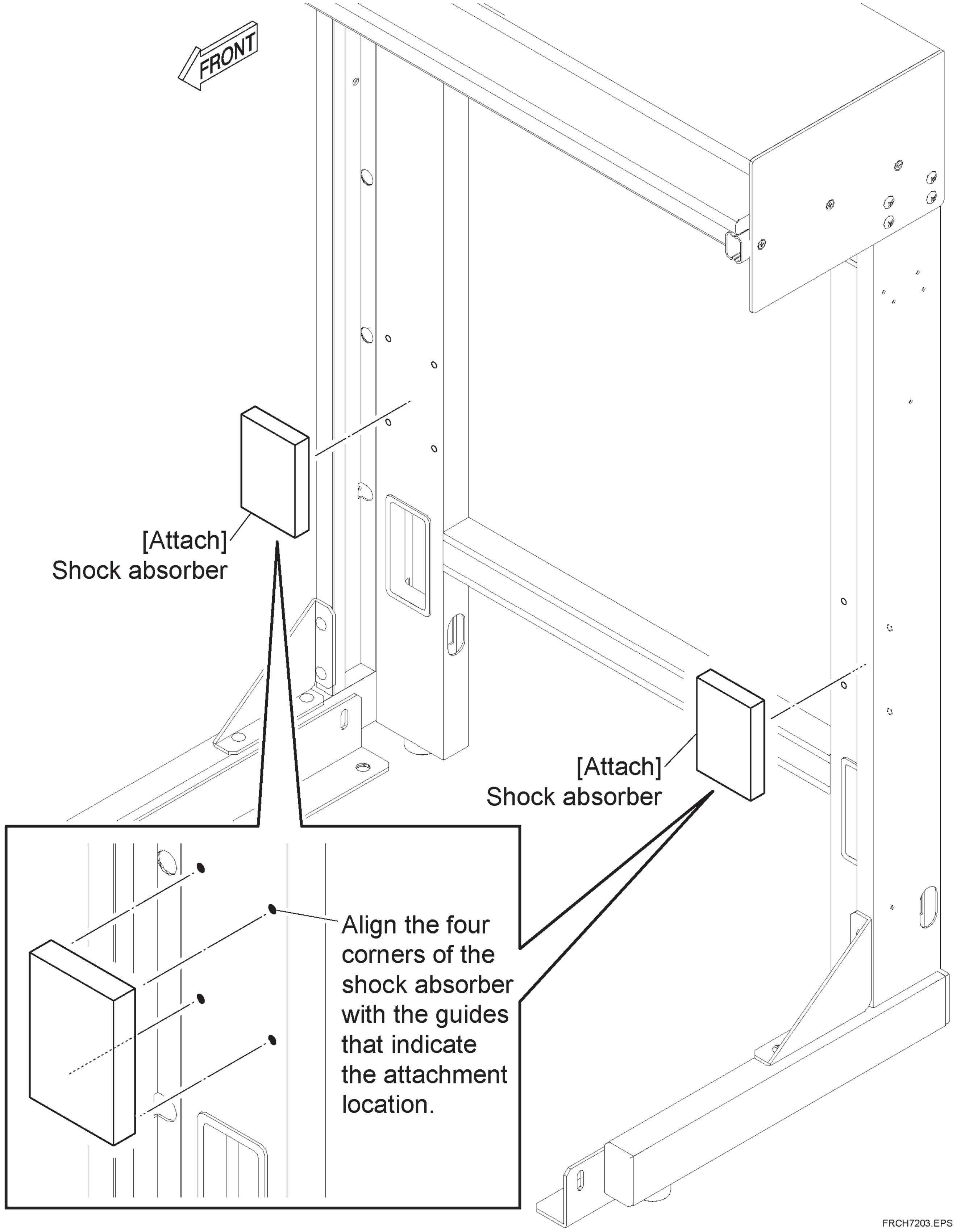
6. **Screw down the shelf.**


[Tighten]
Screw
(T5x12)
[Tighten]
Screw
(T5x12)
[Tighten]
Screw
(T5x12)
[Tighten]
Screw
(T5x12)
FRONT
FRCH7205.EPS

7. **Mount the brackets.**


FRONT
[Tighten]
Screw (T6x15)
[Tighten]
Screw
(T6x15)
Bracket
Bracket
FRCH7202.EPS

8. **Mount the shock absorbers.**


FRONT
[Attach]
Shock absorber
[Attach]
Shock absorber
FRCH7203.EPS

Align the four corners of the shock absorber with the guides that indicate the attachment location.

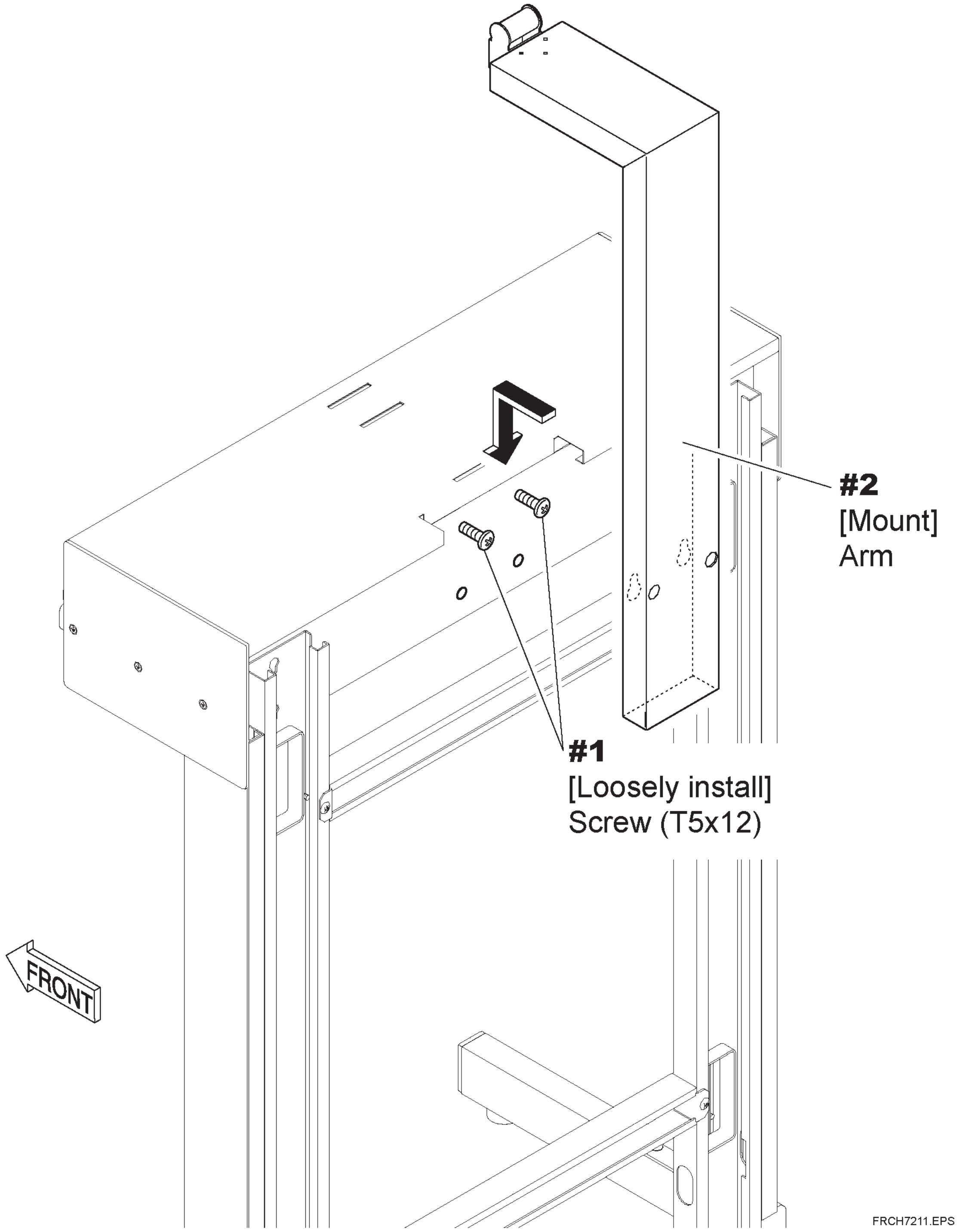
3. Attachment of the Options

3.1 Mounting the Arm

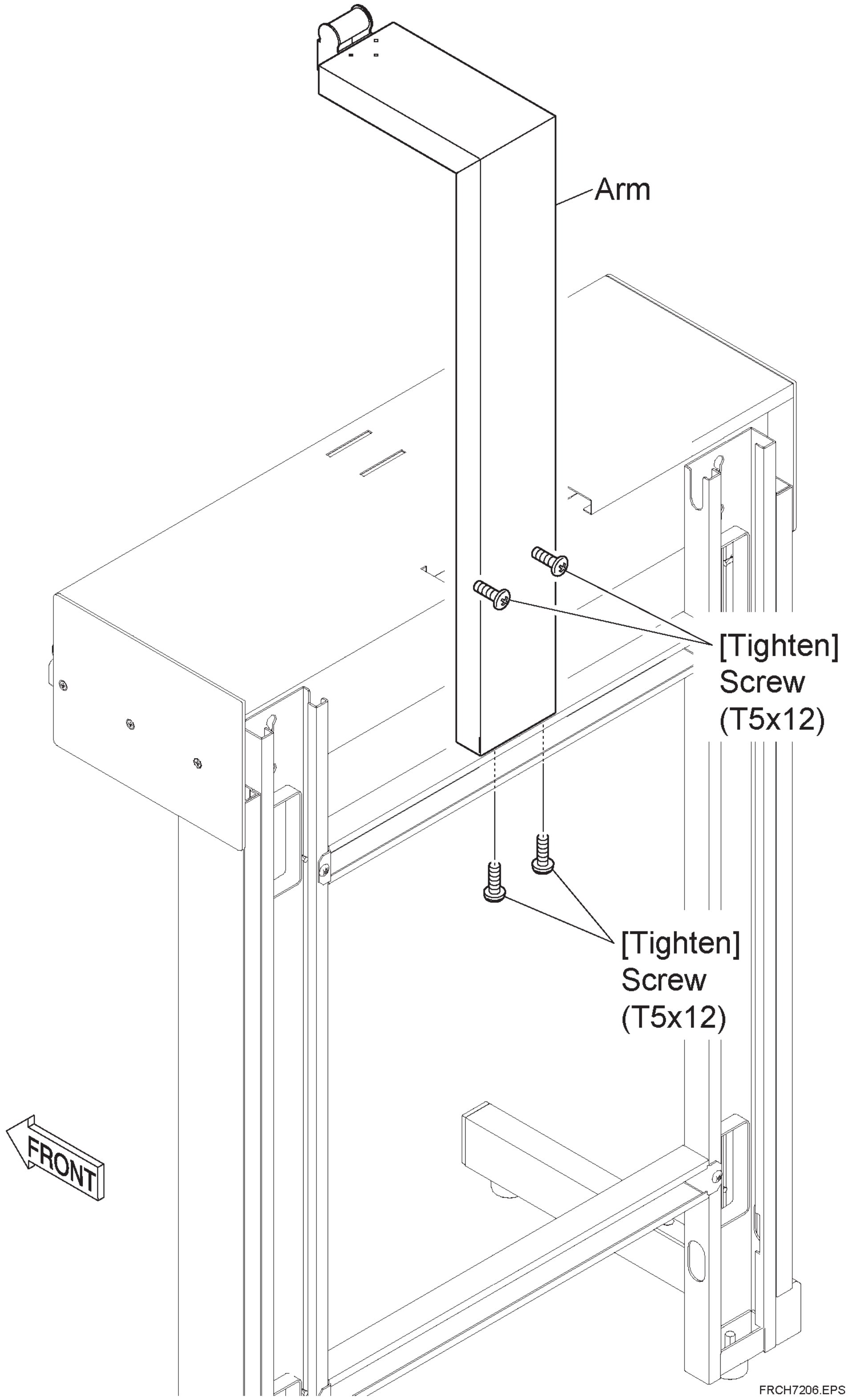
1. **Mount the arm.**

◆ *NOTE* ◆

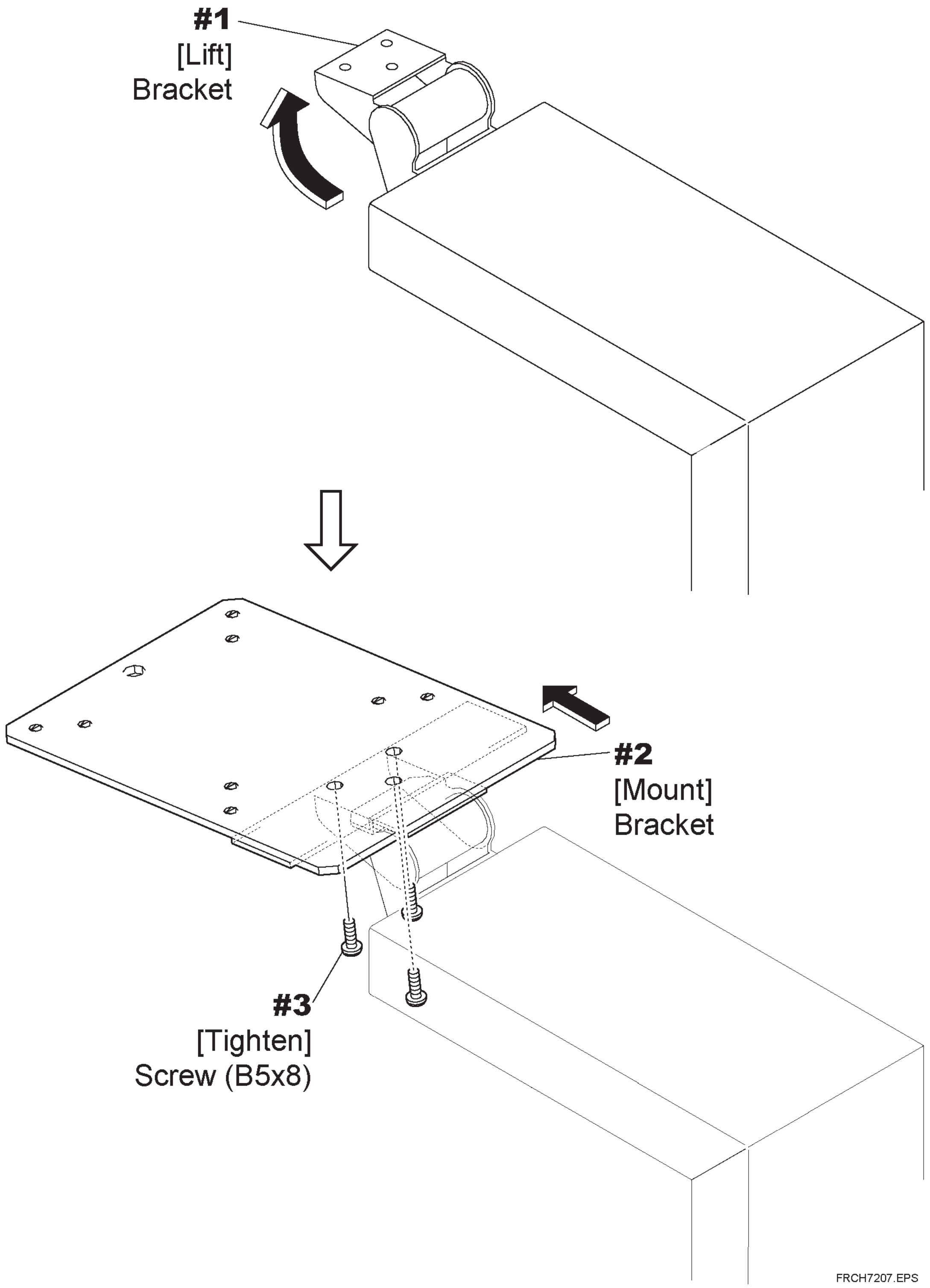
Be sure to mount the struts with the two screws temporarily tightened.


#2
[Mount]
Arm
#1
[Loosely install]
Screw (T5x12)
FRONT
FRCH7211.EPS

2. **Screw the arm.**


Arm
[Tighten]
Screw
(T5x12)
[Tighten]
Screw
(T5x12)
FRONT
FRCH7206.EPS

3. **Lift the connection at the tip of the arm by means of a tool such as pincers. Attach the bracket and screw it.**


#1
[Lift]
Bracket
#2
[Mount]
Bracket
#3
[Tighten]
Screw (B5x8)
FRCH7207.EPS

4. **Secure the supporter.**

◆ **NOTE** ◆

When the arm (optional) has been mounted, be sure to retain the supporter according to "Appendix 3-5 Securing the Supporter".

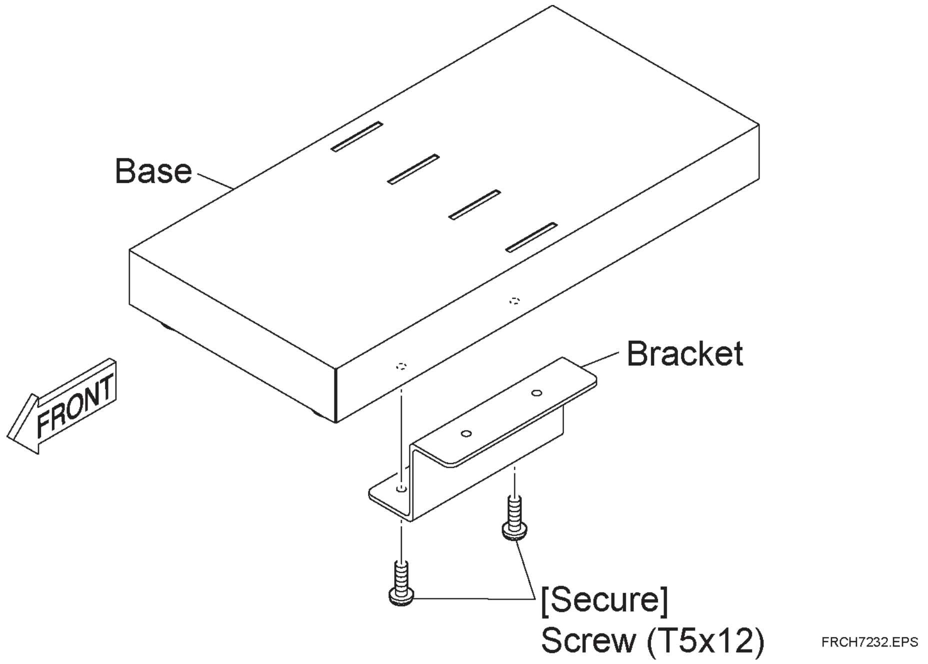
☞ ***{IN:Appendix 3-5_Securing the Supporter}***

3.2 Mounting the Base

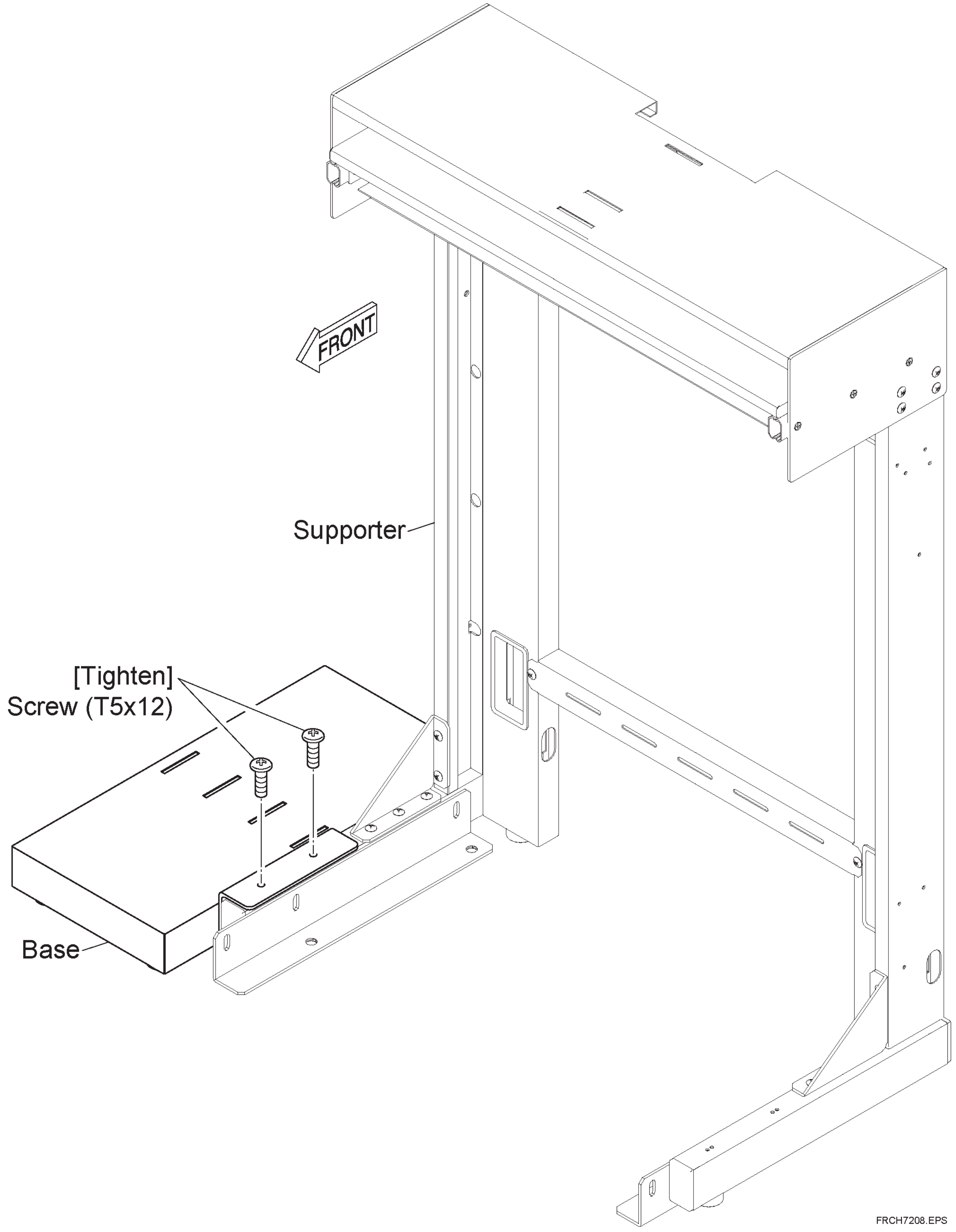
◇ *REFERENCE* ◇

The base can be placed either on the right or the left at symmetrical positions.

1. **Attach the bracket to the base.**


Base
Bracket
FRONT
[Secure]
Screw (T5x12)
FRCH7232.EPS

2. **Mount the base to the supporter.**

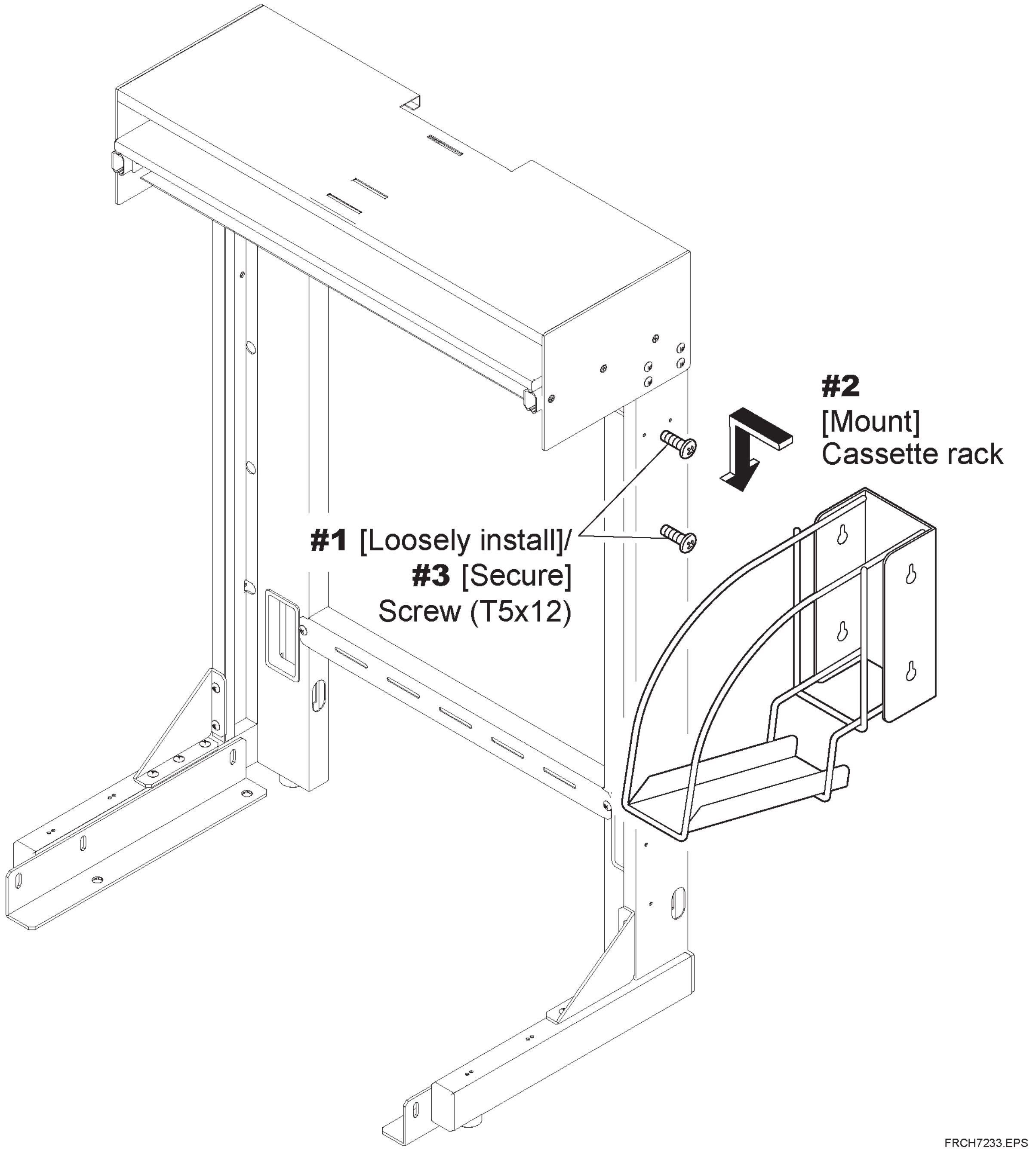

FRONT
Supporter
[Tighten]
Screw (T5x12)
Base
FRCH7208.EPS

3.3 Mounting the Cassette Rack

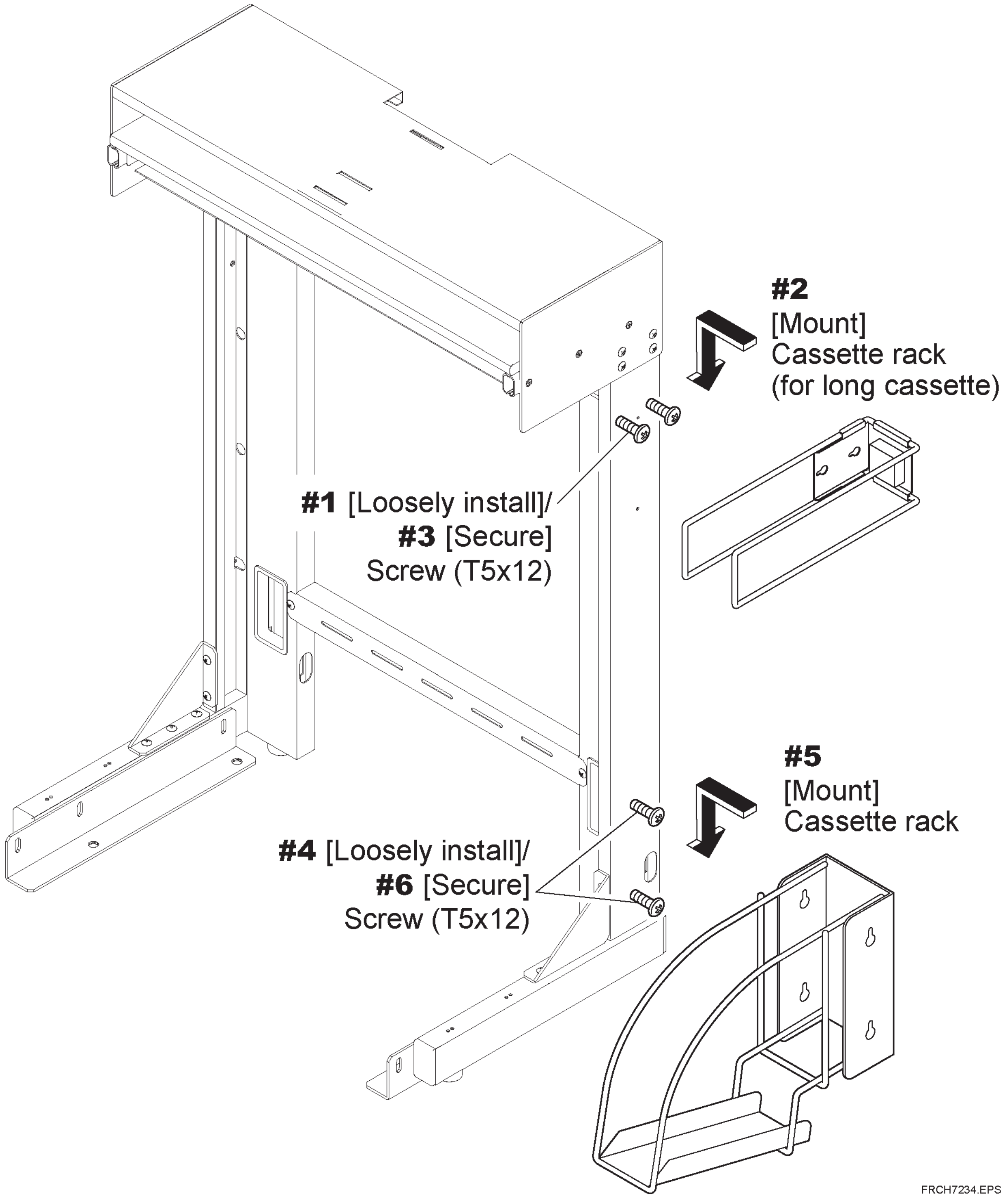
◇ *REFERENCE* ◇

The cassette rack can be placed either on the right or the left at symmetrical positions.

■ Mounting the Cassette Rack


#2
[Mount]
Cassette rack
#1 [Loosely install]/
#3 [Secure]
Screw (T5x12)
FRCH7233.EPS

■ Mounting the Cassette Rack (for Use with a Long Cassette)


#2
[Mount]
Cassette rack
(for long cassette)
#1 [Loosely install]/
#3 [Secure]
Screw (T5x12)
#5
[Mount]
Cassette rack
#4 [Loosely install]/
#6 [Secure]
Screw (T5x12)
FRCH7234.EPS

4. Securing the Machine

⚠ WARNING

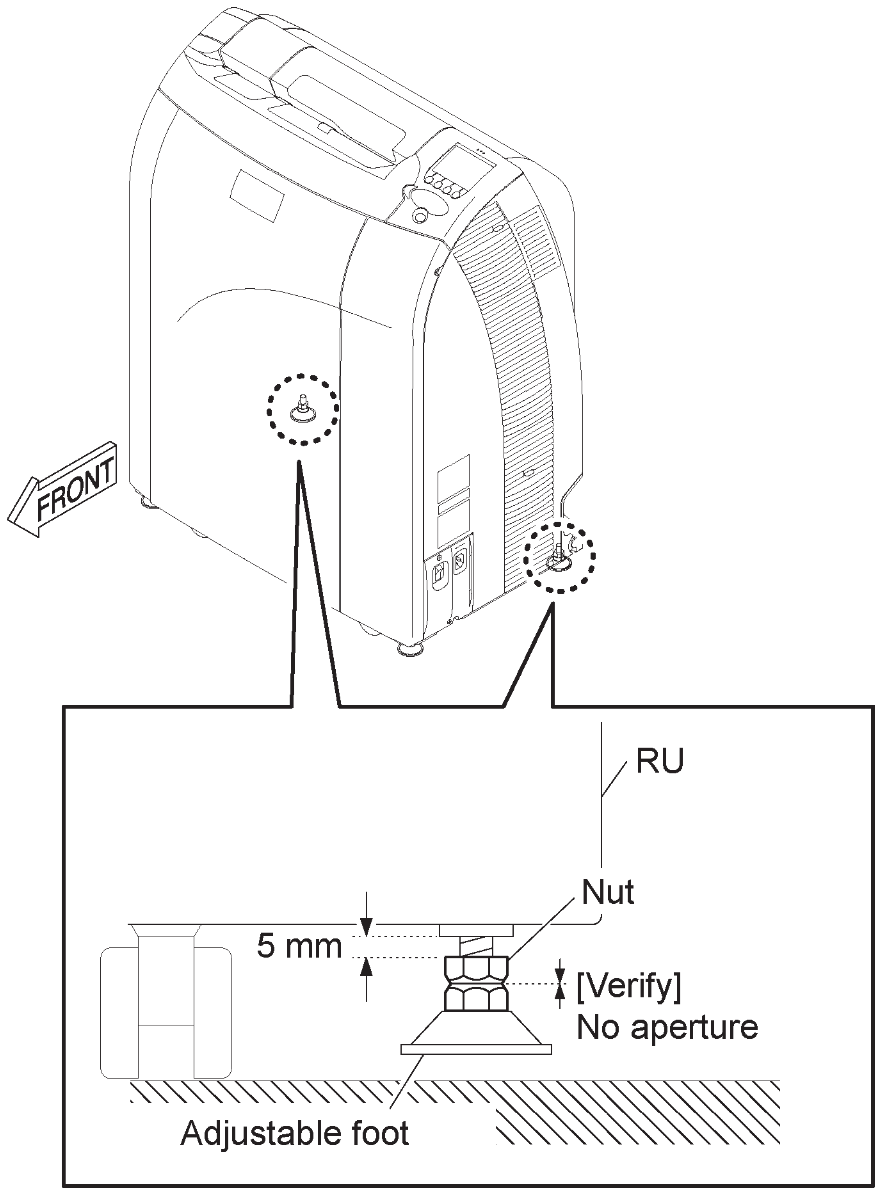
Be sure to fix the supporter to the floor or to the wall to secure the machine according to "Appendix 3-5 Securing the Supporter" in a site where a long cassette is used.

☞ ***{IN:Appendix 3-5_Securing the Supporter}***

1. **Adjust the height of the adjustable foot so that a distance from the upper surface of the nut of the adjustable foot to the bottom of the machine is approx. 5 mm, in order to mount the bracket on the machine. After the adjustment, check to make sure that there is no aperture between the two nuts of the adjustable foot.**

◆ NOTE ◆

Check to make sure that there is no aperture between the two nuts of the adjustable foot. If there is an aperture between the nuts, the machine retaining bracket cannot be fixed properly.



FRCH7240.EPS

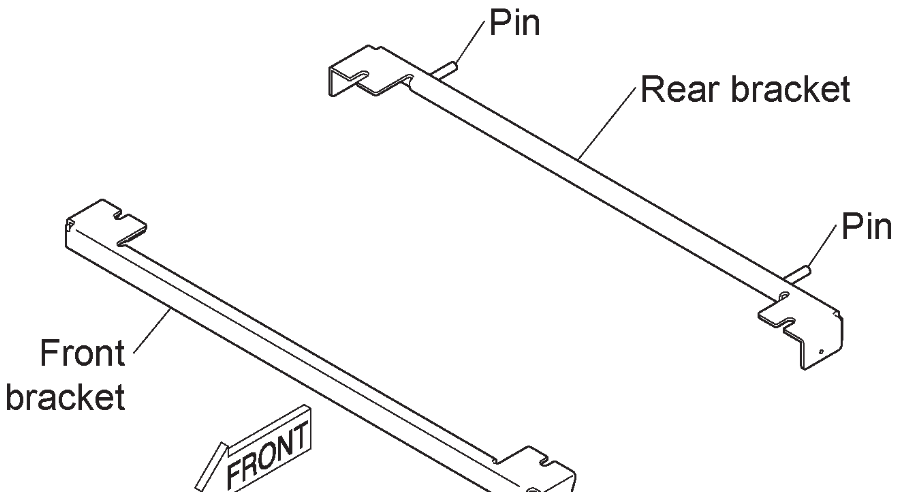
2. **Insert the rear bracket from the rear of the machine between the nut of the adjustable foot and the bottom of the machine. While pushing the bracket against the machine, fasten the nut of the adjustable foot for retaining.**

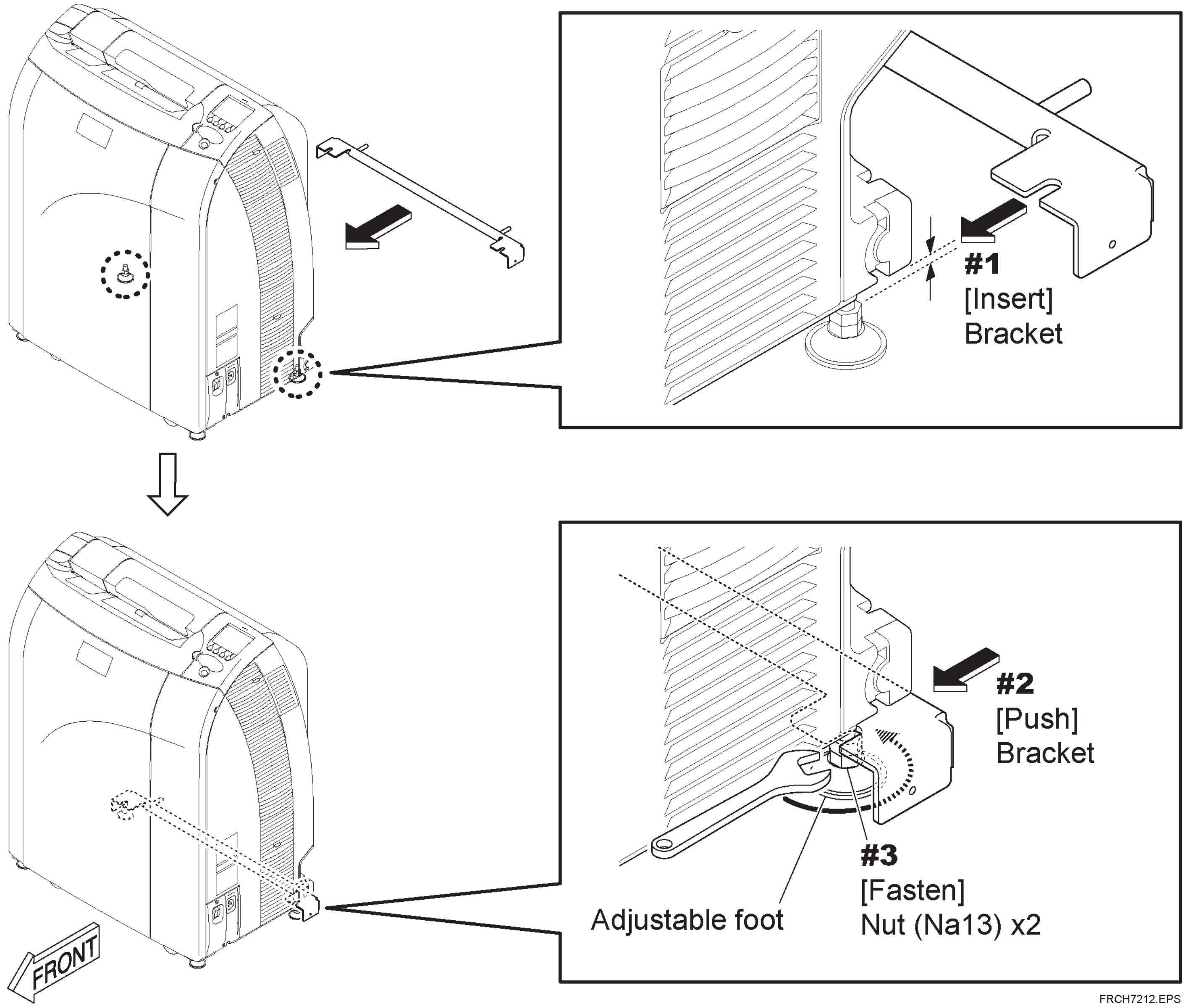
◆ *NOTES* ◆

- *Be sure to fasten the nut while pushing the bracket against the machine. If the bracket is pushed insufficiently, the machine may not be able to be properly retained.*
- *When fastening the nut of the adjustable foot, exercise care not to cause an aperture between the two nuts. The bracket might not be able to be properly retained.*

◇ *REFERENCE* ◇

The front bracket (for use on the front face) and the rear bracket (for use on the rear face) of the anti-topple retainer have different shapes.
The rear bracket has pins on its back surface.

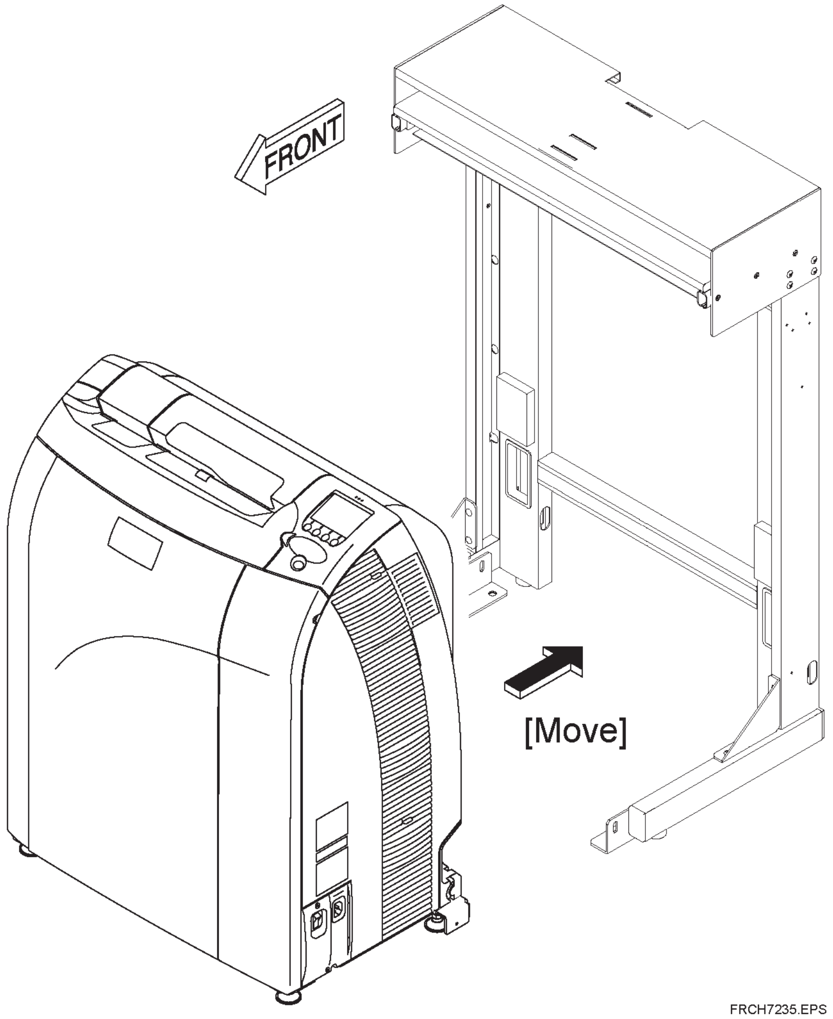

Pin
Rear bracket
Pin
Front bracket
FRONT


#1
[Insert]
Bracket
#2
[Push]
Bracket
#3
[Fasten]
Nut (Na13) x2
Adjustable foot
FRONT
FRCH7212.EPS

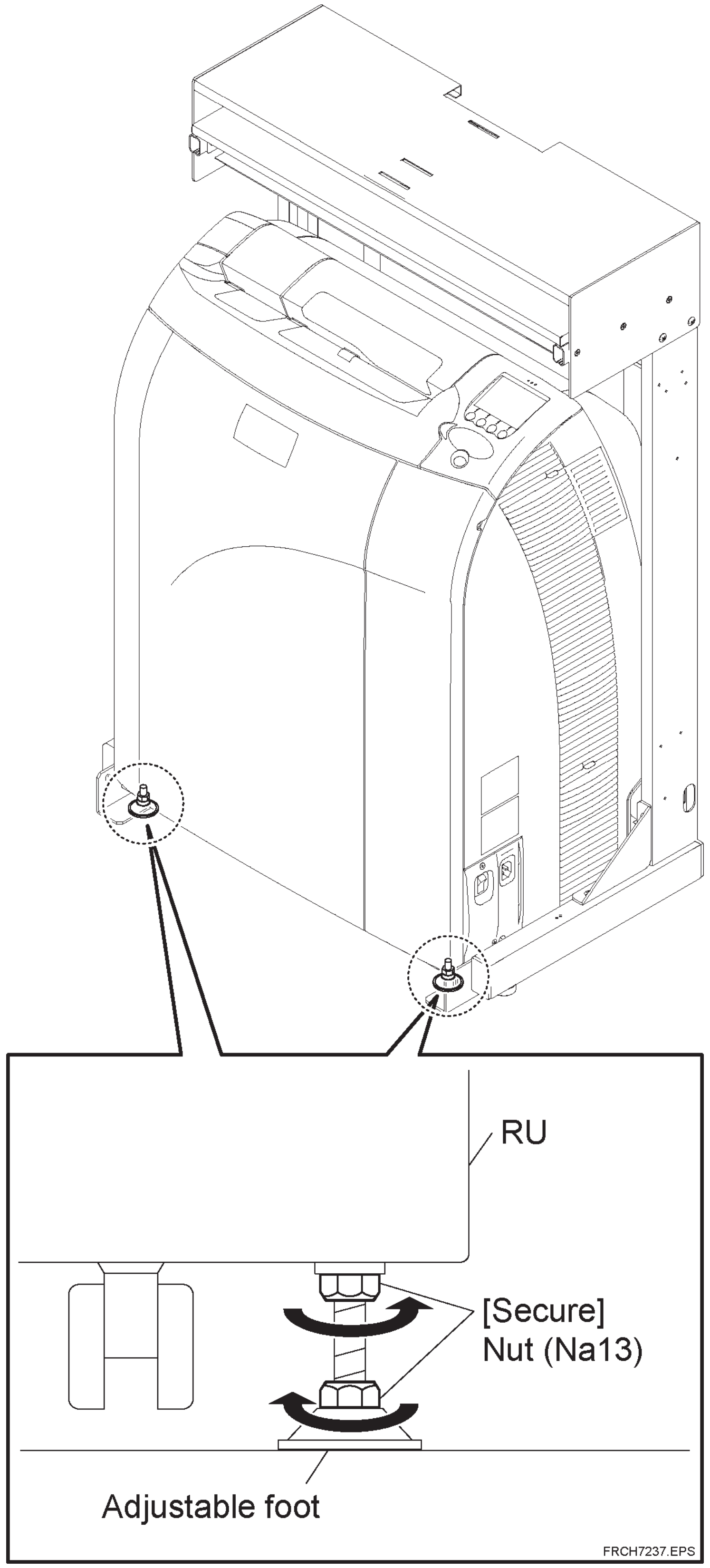
3. **Move the machine into the supporter.**

⚠ CAUTION

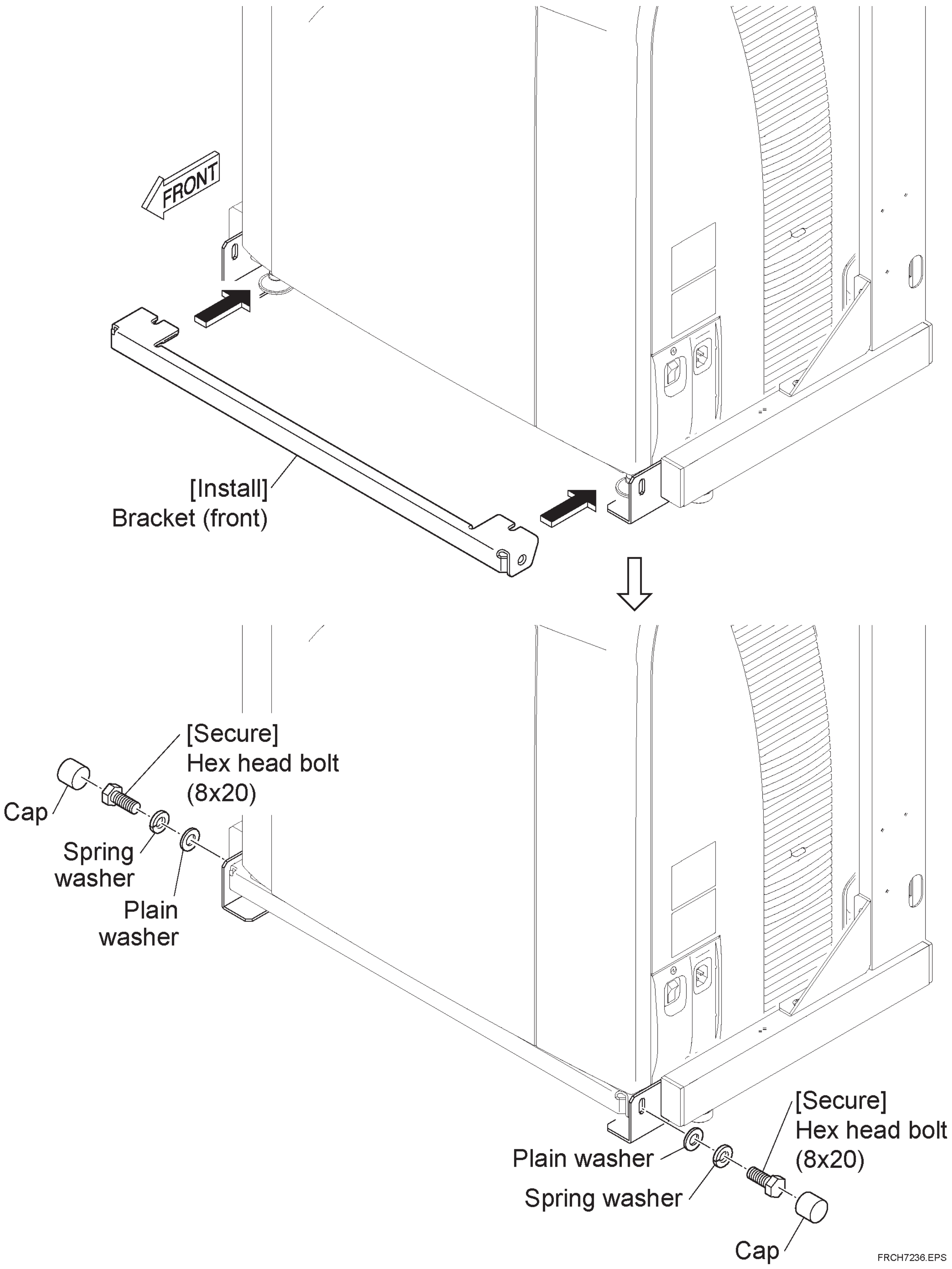
When pushing the machine into the supporter or pulling the machine out of the supporter, exercise care so that your fingers and other parts of your body are not caught between the supporter and machine.


FRONT
[Move]
FRCH7235.EPS

4. **Fix the adjustable feet on the front face of the machine.**


RU
[Secure]
Nut (Na13)
Adjustable foot
FRCH7237.EPS

5. **Place the bracket (for the front face) and secure with hex head bolts.**


FRONT
[Install]
Bracket (front)
[Secure]
Hex head bolt
(8x20)
Cap
Spring
washer
Plain
washer
[Secure]
Hex head bolt
(8x20)
Plain washer
Spring washer
Cap
FRCH7236.EPS

5. Securing the Supporter

⚠ **WARNING**

Be sure to fix the supporter to the floor or to the wall to secure the machine in a site where a long cassette is used.

◆ *NOTE* ◆

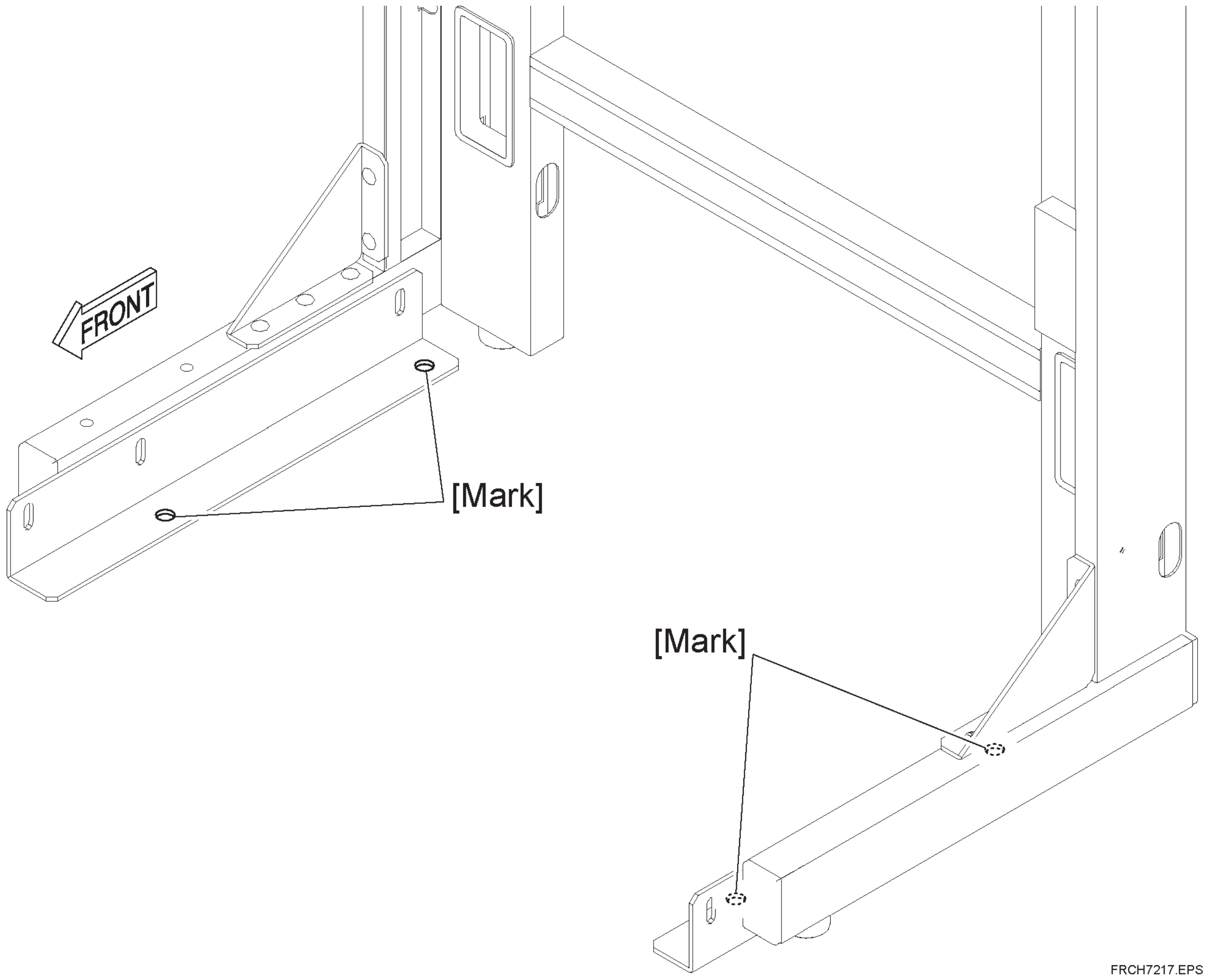
When the arm (optional) has been mounted, be sure to fix the supporter to the floor or the wall to secure the machine.

To secure the supporter, it is sometimes fixed to the floor and sometimes to the wall. Depending on the conditions on the installation site, follow the reference procedures below to fix the supporter to the floor or to the wall, before securing the machine.

- **When the supporter is to be fixed to the floor:**
  ☞**{IN:Appendix 3-5.1_Fixing the Supporter to the Floor}**
- **When the supporter is to be fixed to the wall:**
  ☞**{IN:Appendix 3-5.2_Fixing the Supporter to the Wall}**

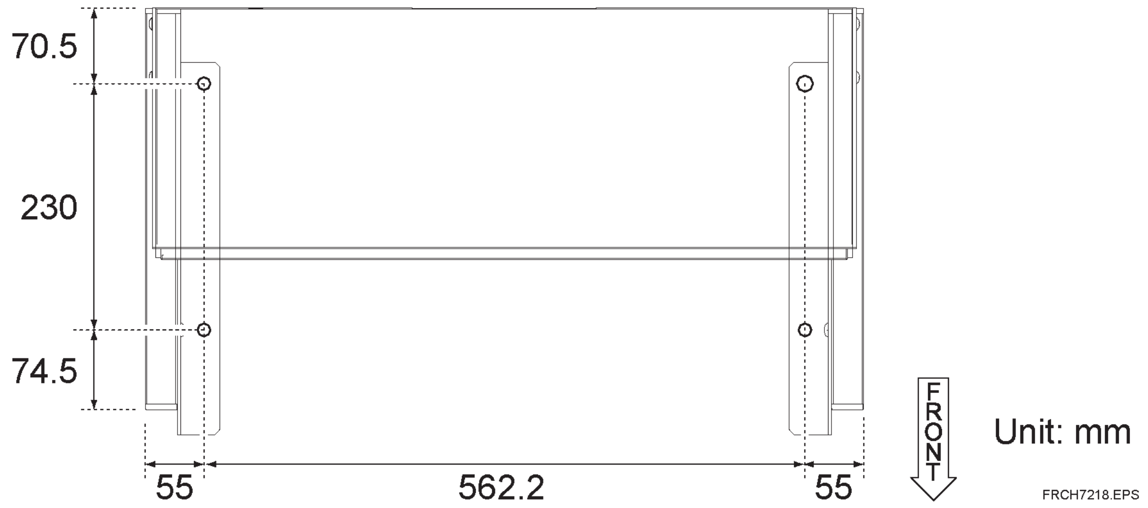
5.1 Fixing the Supporter to the Floor

1. **Put the assembled supporter on a position where it is to be fixed. While holding the supporter not to shift, mark with a pen or the like the positions to be bored where the anchor nuts are to be embedded.**


FRONT
[Mark]
[Mark]

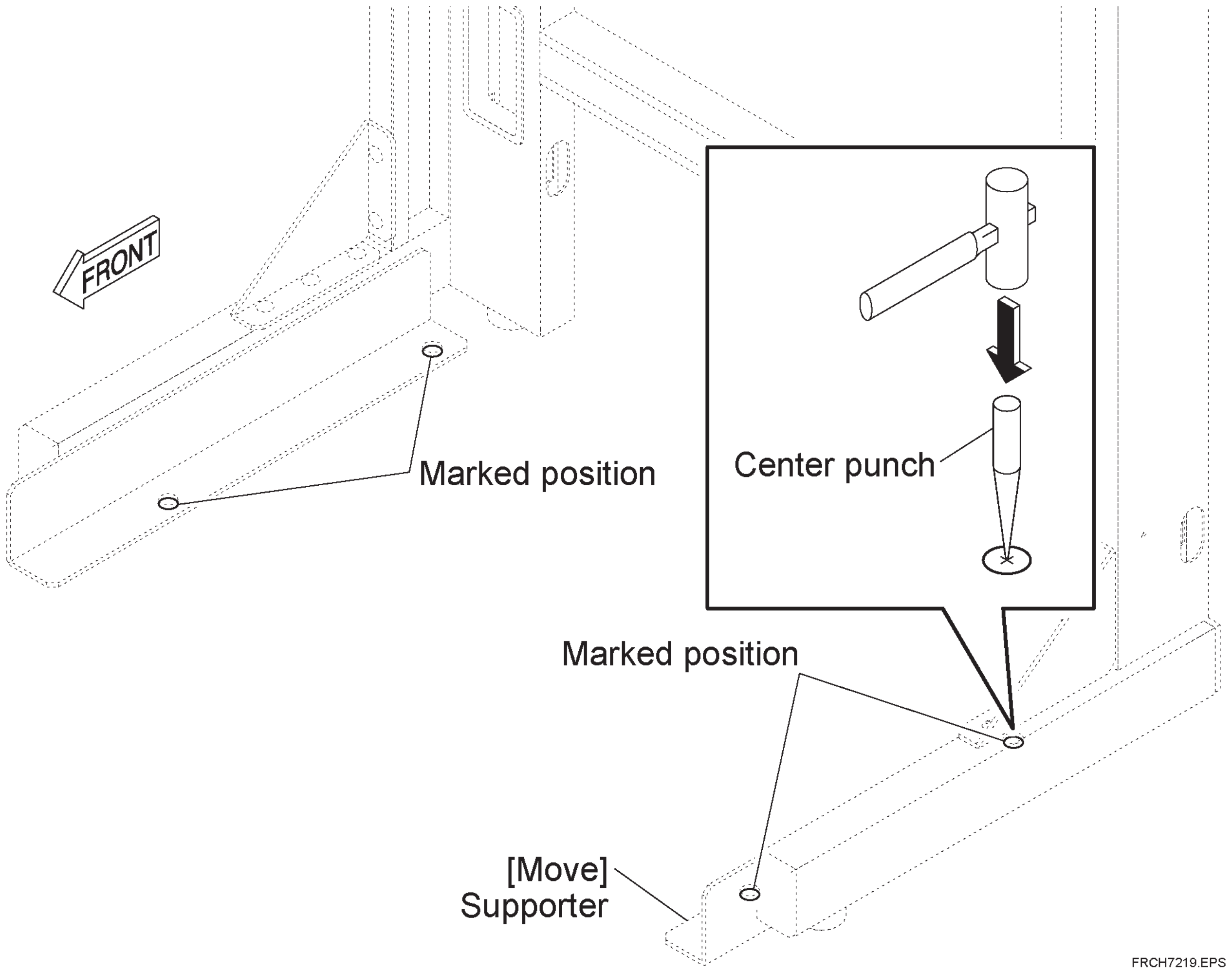
FRCH7217.EPS

<Reference value>


70.5
230
74.5
55
562.2
55
FRONT
Unit: mm

FRCH7218.EPS

2. **Once move the supporter. Strike the center punch at the center of the marked position to easily drill a hole.**


FRONT
Marked position
Center punch
Marked position
[Move]
Supporter

FRCH7219.EPS

3. **Drill holes with a diameter of 12.5 mm and a depth of 35 mm at the four marked positions.**

CAUTION

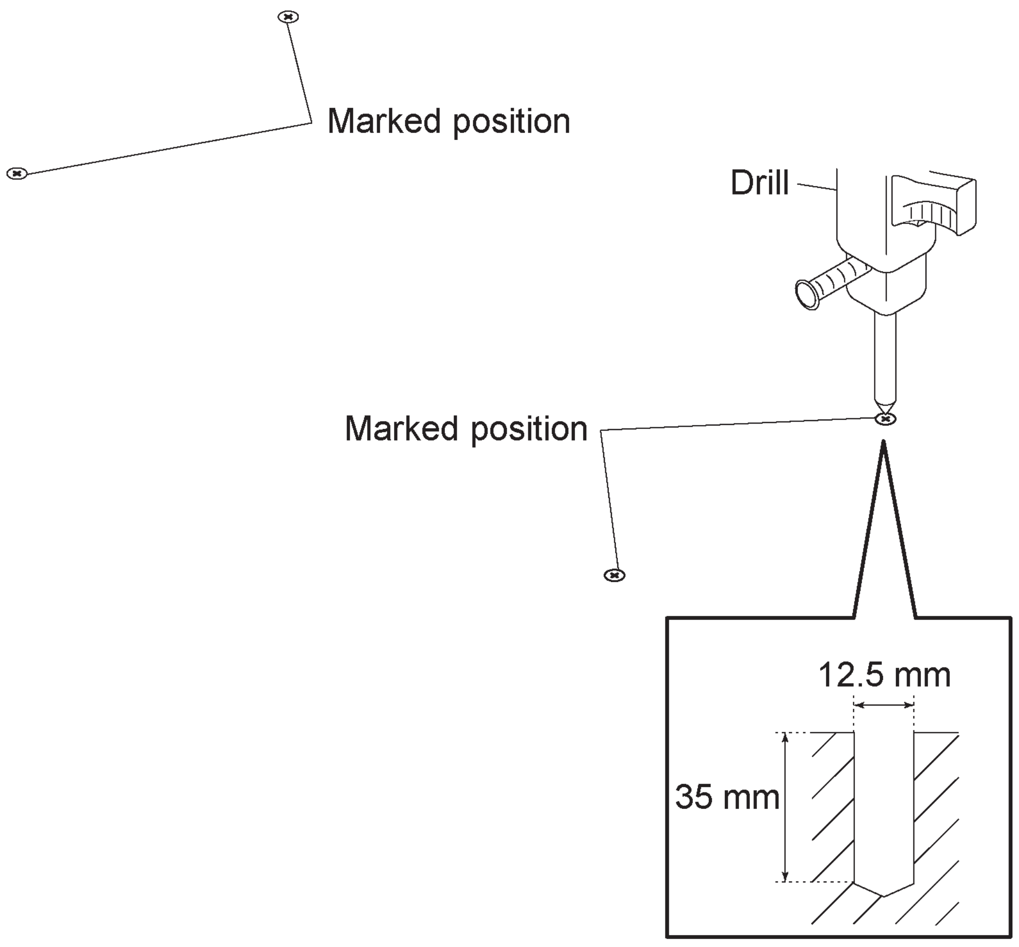
When drilling a hole, wear protective goggles. Drilled chips might scatter.

◆ **NOTE** ◆

When drilling a hole, exercise care not to tilt the drill. If the drill is tilted, the anchor nut cannot be embedded straight. As a result, there is possibility that the supporter cannot be correctly retained.

◇ REFERENCE ◇

When drilling a hole, use of a vacuum cleaner is recommended. If the hole is drilled while sucking the chips by the vacuum cleaner, the depth of the hole can be easily checked.

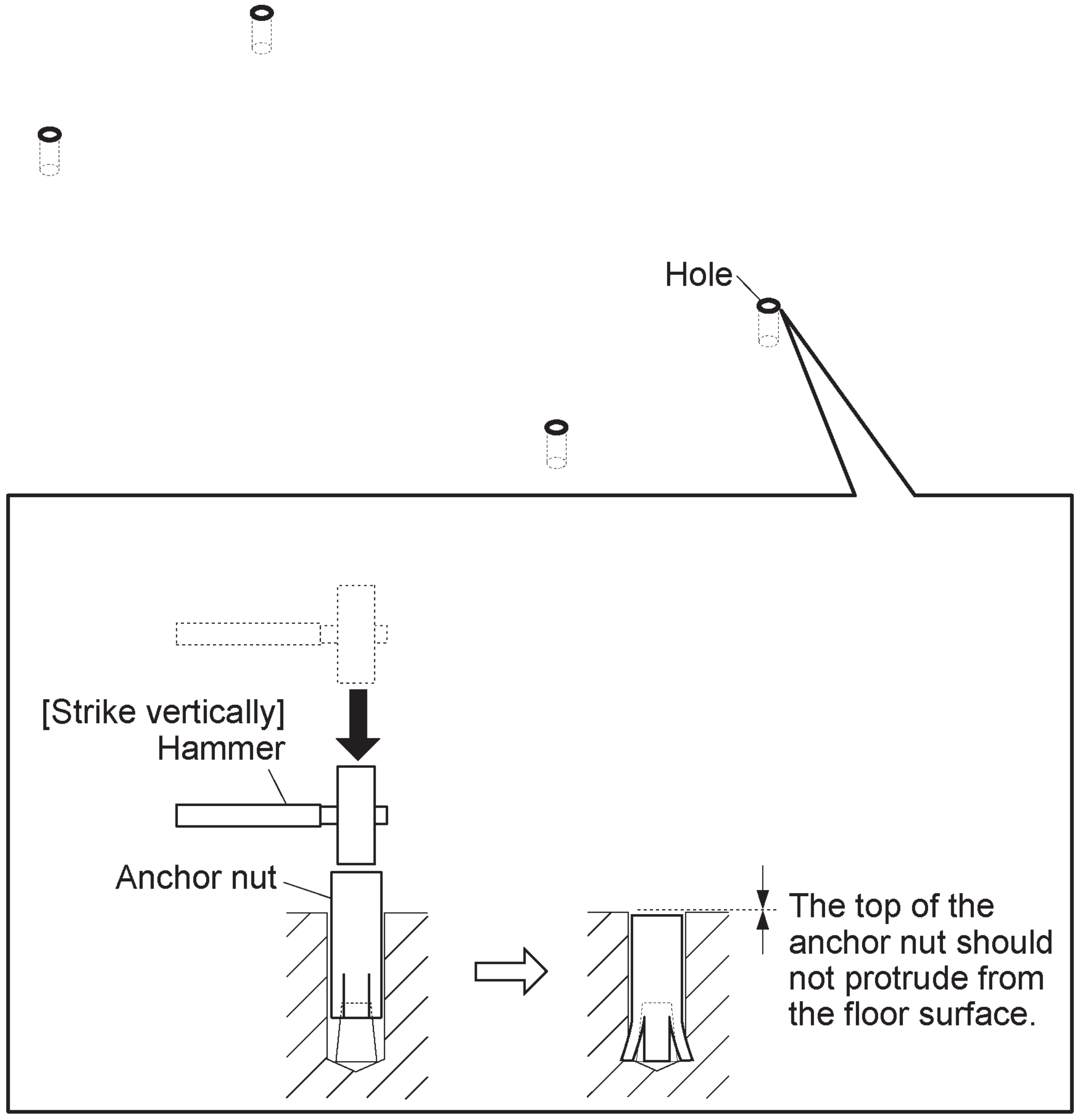

Marked position
Drill
Marked position
12.5 mm
35 mm

FRCH7220.EPS

4. **Strike the anchor nut by a hammer to embed the nut into the four drilled holes.**

◆ **NOTES** ◆

- *When embedding the anchor nut, strike the top of the anchor nut vertically to the nut. If the top of the anchor nut deforms, the bolt for retaining the bracket cannot be installed.*
- *Embed the anchor nut until its top does not protrude from the floor surface.*

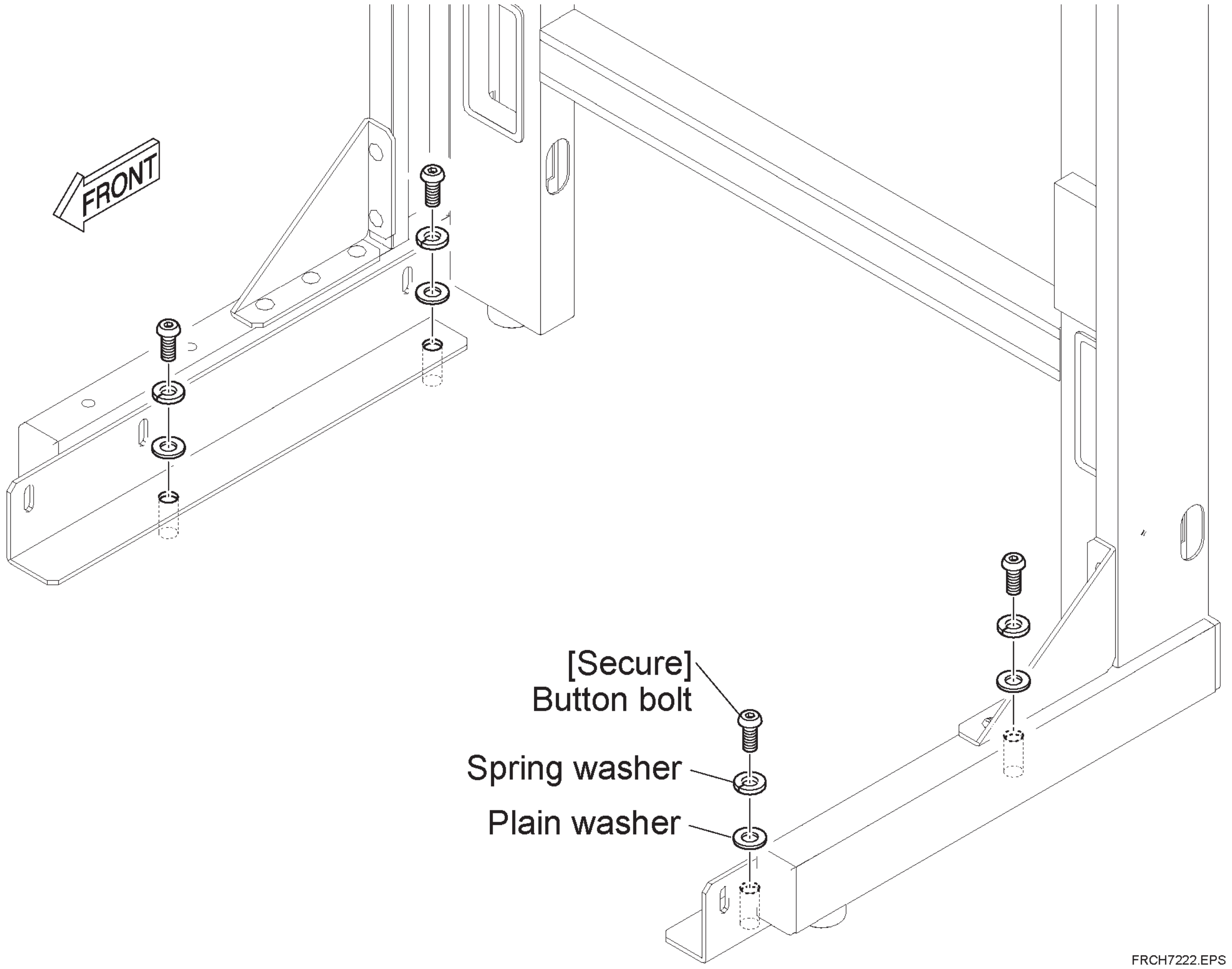

Hole
[Strike vertically]
Hammer
Anchor nut
The top of the anchor nut should not protrude from the floor surface.

FRCH7221.EPS

5. **Place the supporter on a position where it is to be fixed.**

◆ NOTE ◆

Always use button bolts to fix the supporter. If a normal bolt is used, the head of the bolt comes into contact with the adjustable foot when the machine is moved, and the adjustable foot might get deformed.


FRONT
[Secure]
Button bolt
Spring washer
Plain washer
FRCH7222.EPS

6. **Secure the machine.**

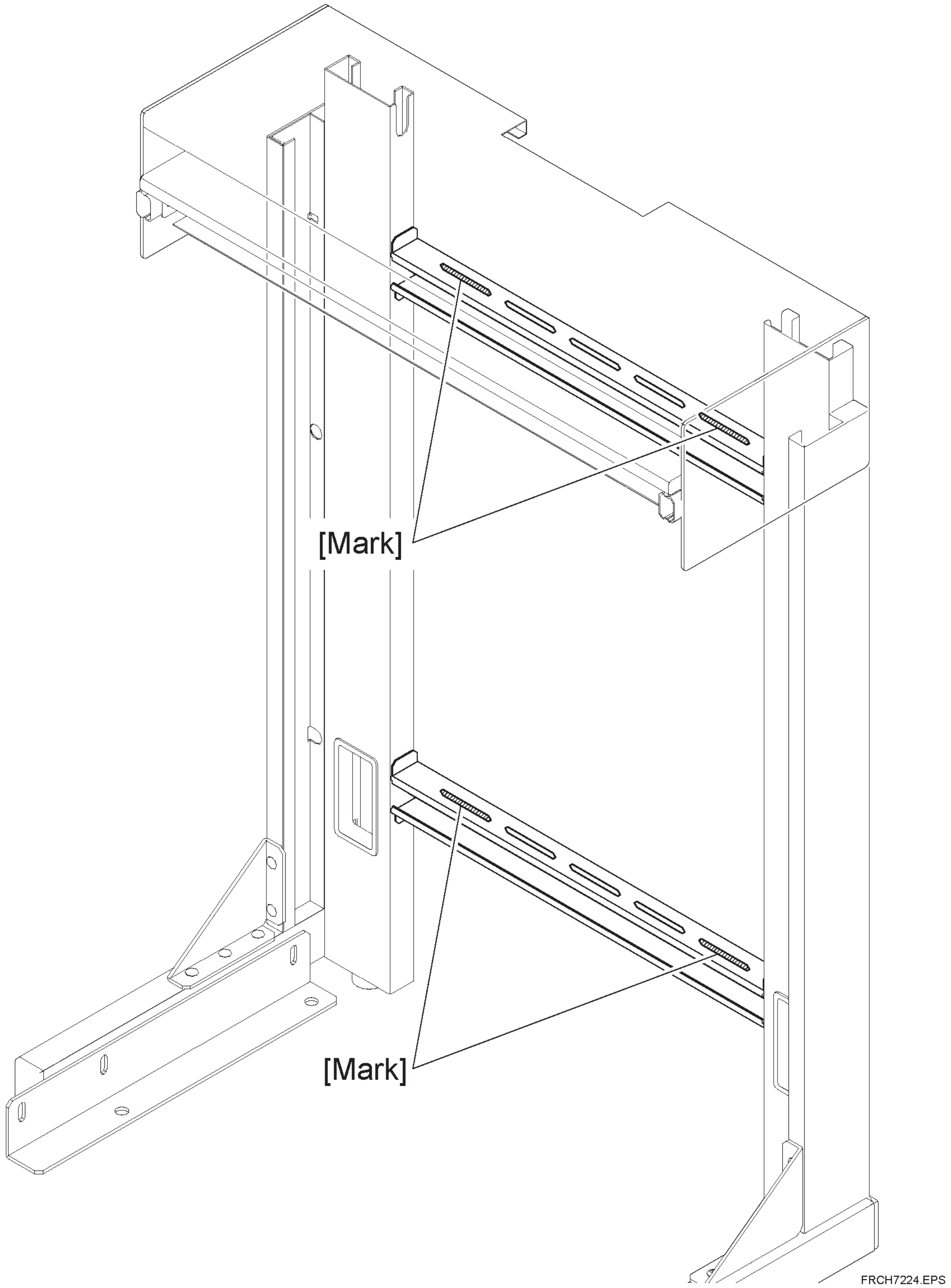
☞{IN:Appendix 3-5.3_Securing the Machine (when the Supporter has been Fixed)}

5.2 Fixing the Supporter to the Wall

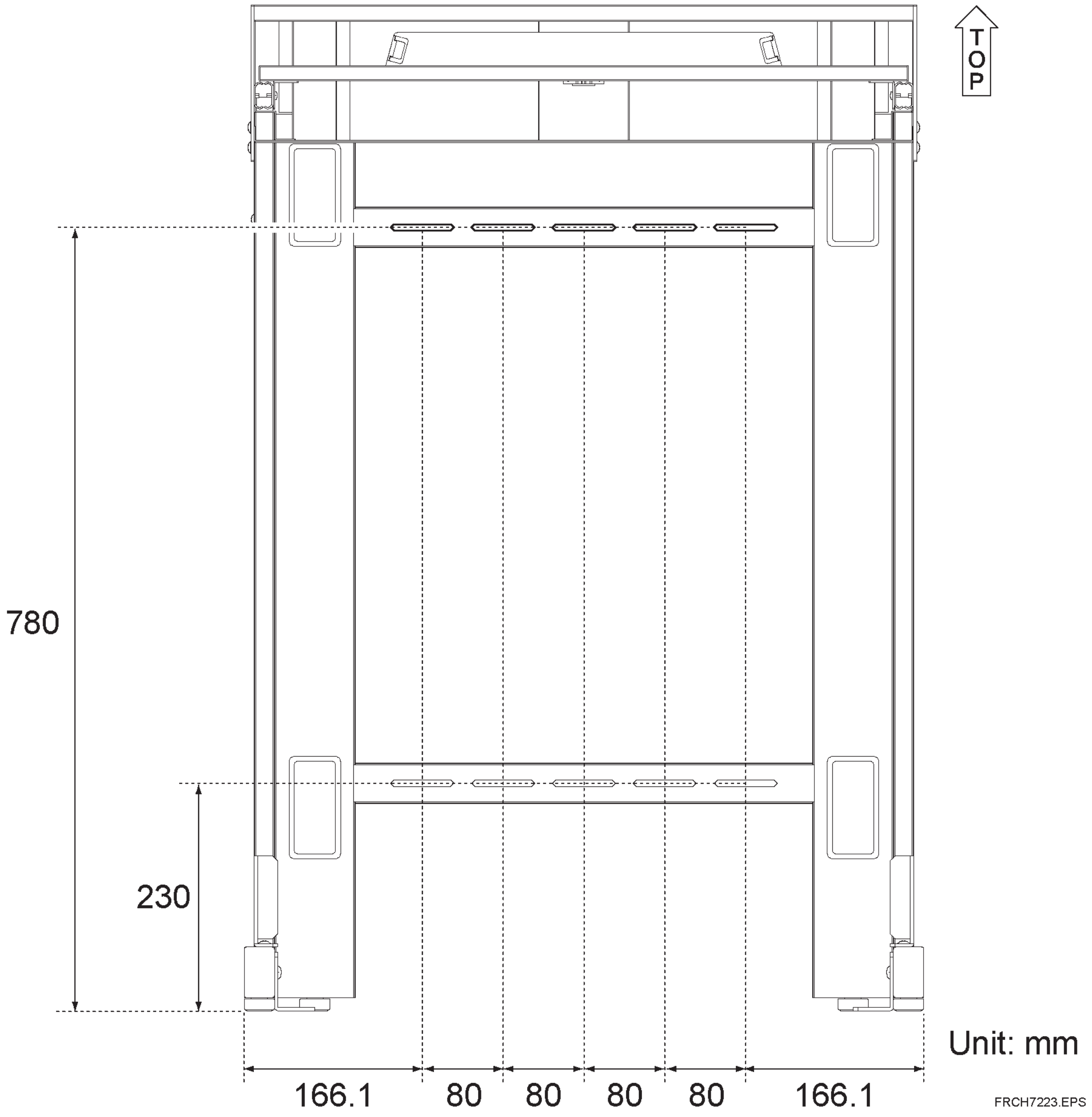
1. Place the assembled supporter on a position where it is to be fixed. Check the conditions of the wall at the installation site. Mark the positions to be screwed with a pen or the like.

◇ REFERENCE ◇

Mark two holes among five holes on each of the upper and lower struts.


[Mark]
[Mark]
FRCH7224.EPS

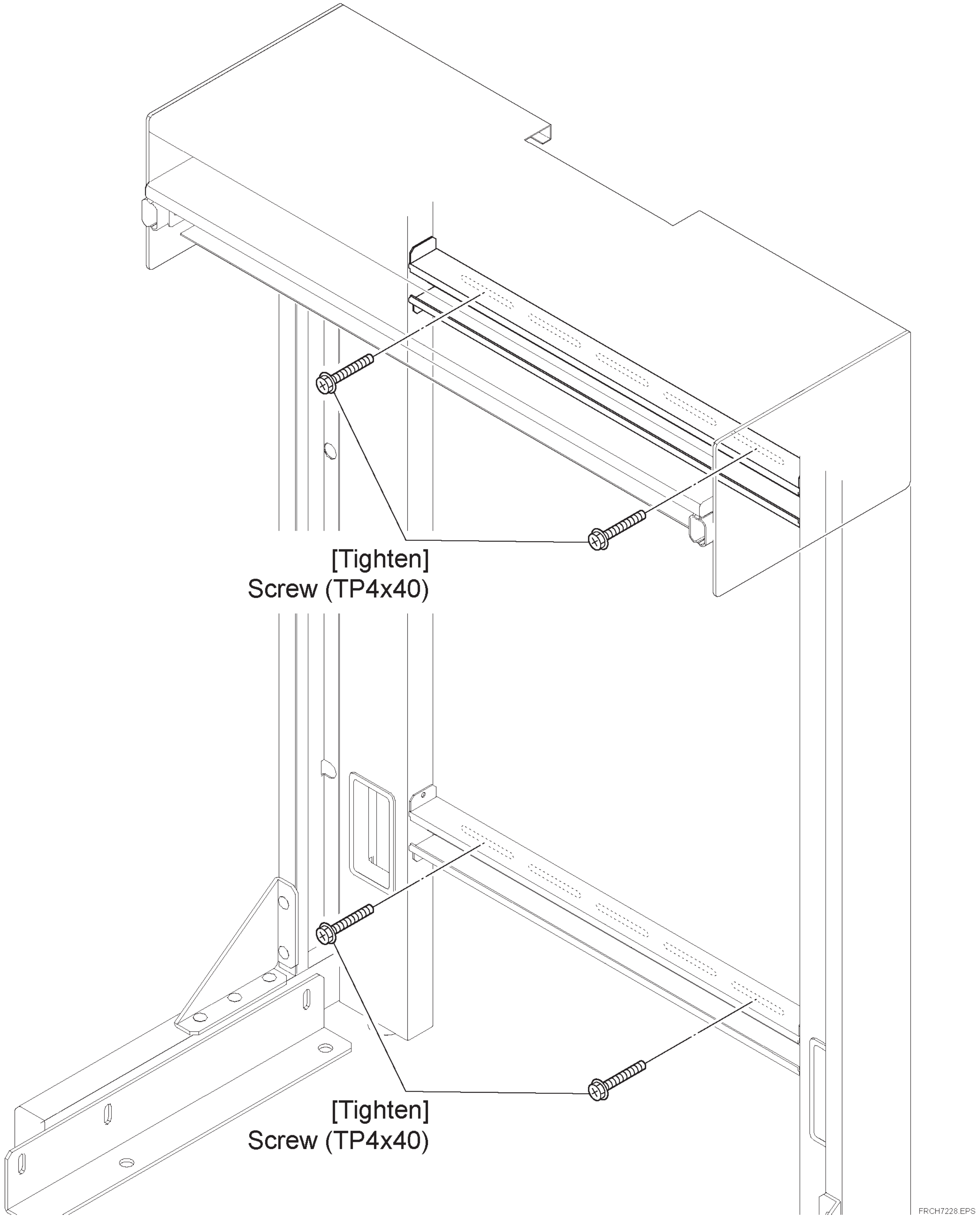
<Reference value>


TOP
780
230
Unit: mm
166.1
80
80
80
80
166.1
FRCH7223.EPS

2. **Screw the supporter.**

◇ REFERENCE ◇

Make a preparatory hole of approx. 1 mm on the wall before screwing. This makes the screws easy to be tightened.


[Tighten]
Screw (TP4x40)
[Tighten]
Screw (TP4x40)
FRCH7228.EPS

3. **Secure the machine.**

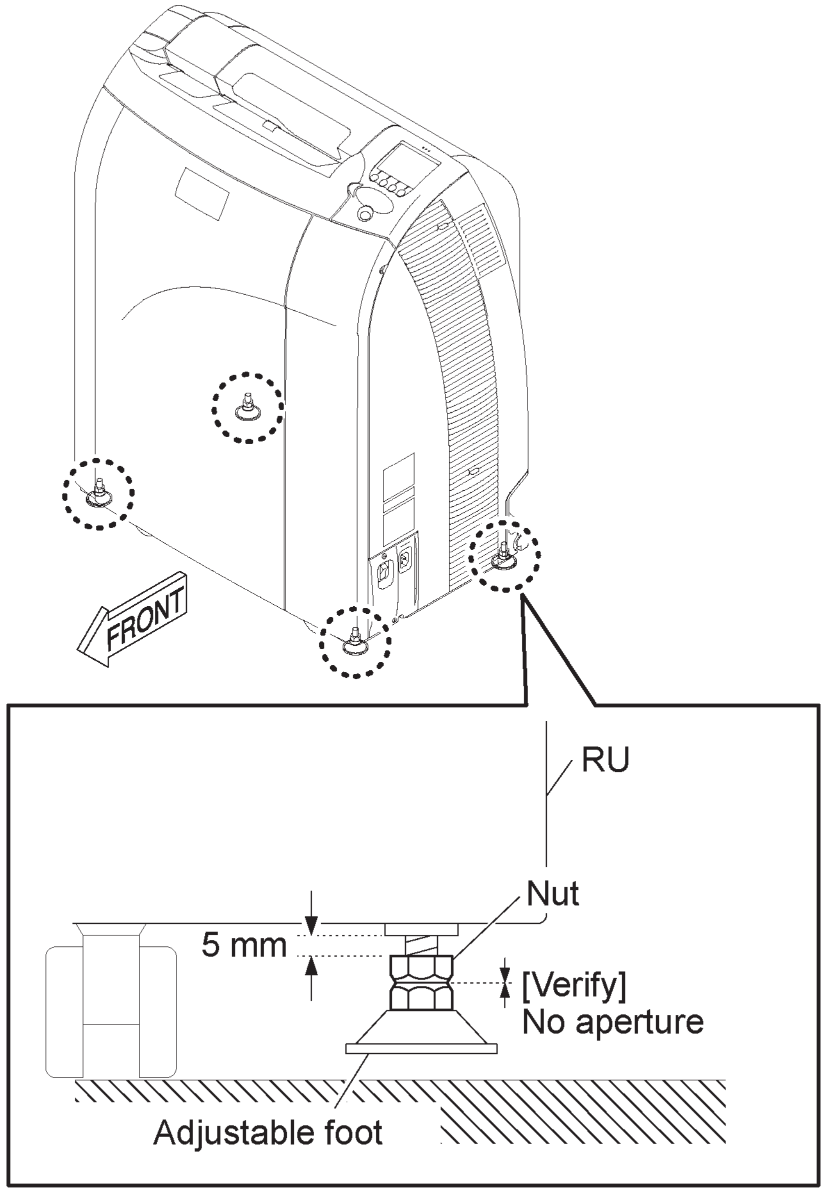
☞{IN:Appendix 3-5.3_**Securing the Machine (when the Supporter has been Fixed)**}

5.3 Securing the Machine (when the Supporter has been Fixed)

1. **Adjust the height of the adjustable foot so that a distance from the upper surface of the nut of the adjustable foot to the bottom of the machine is approx. 5 mm, in order to mount the bracket on the machine. After the adjustment, check to make sure that there is no aperture between the two nuts of the adjustable foot.**

◆ NOTE ◆

Check to make sure that there is no aperture between the two nuts of the adjustable foot. If there is an aperture between the nuts, the machine retaining bracket cannot be fixed properly.



FRCH7087.EPS

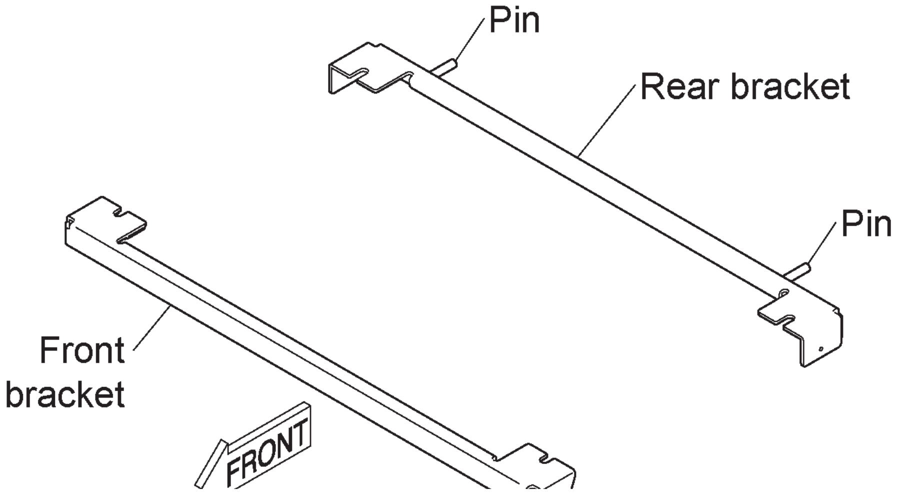
2. **Insert the rear bracket from the rear of the machine between the nut of the adjustable foot and the bottom of the machine. While pushing the bracket against the machine, fasten the nut of the adjustable foot for retaining.**

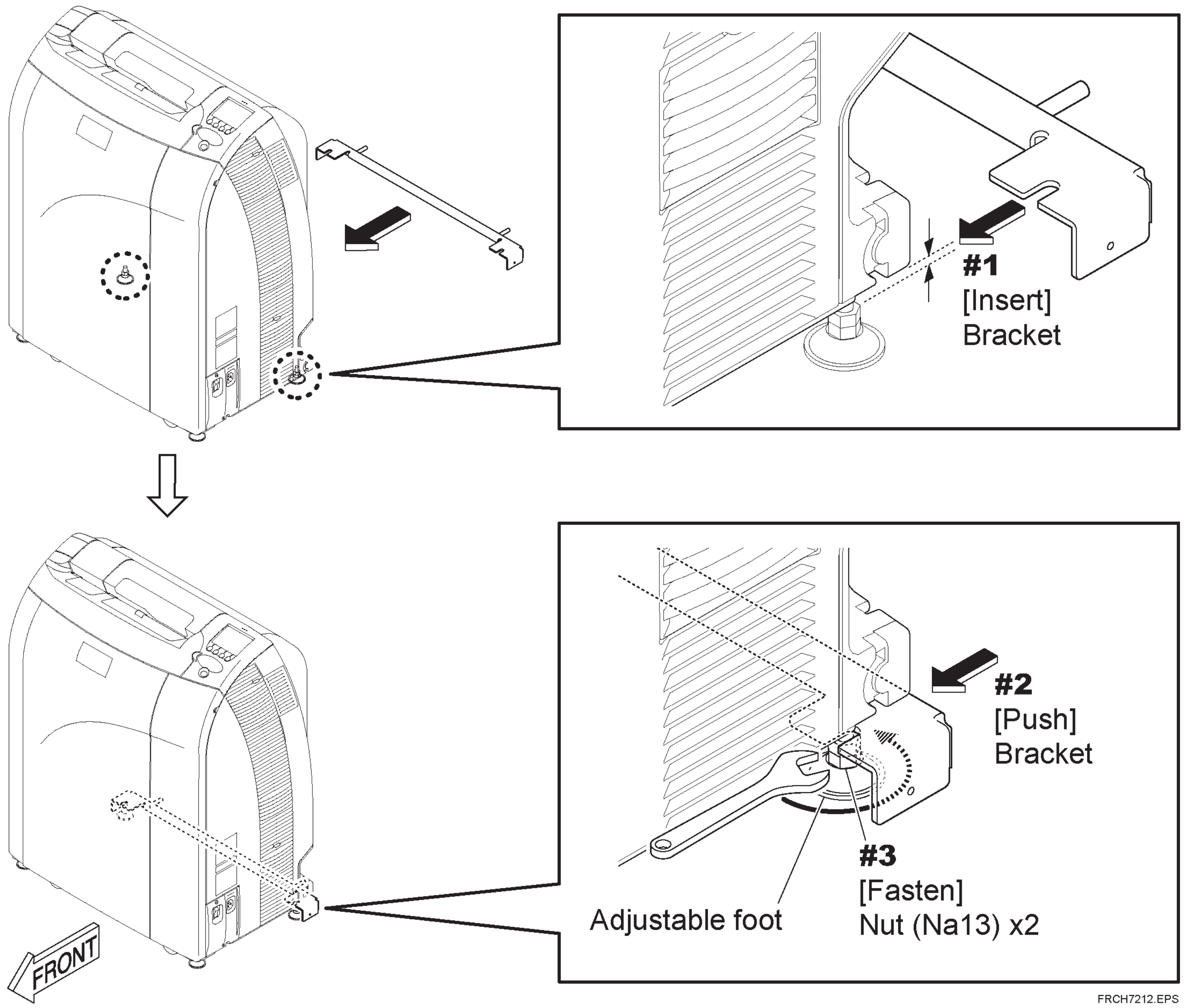
◆ *NOTES* ◆

- *Be sure to fasten the nut while pushing the bracket against the machine. If the bracket is pushed insufficiently, the machine may not be able to be properly retained.*
- *When fastening the nut of the adjustable foot, exercise care not to cause an aperture between the two nuts. The bracket might not be able to be properly retained.*

◇ *REFERENCE* ◇

The front bracket (for use on the front face) and the rear bracket (for use on the rear face) of the anti-topple retainer have different shapes.
The rear bracket has pins on its back surface.

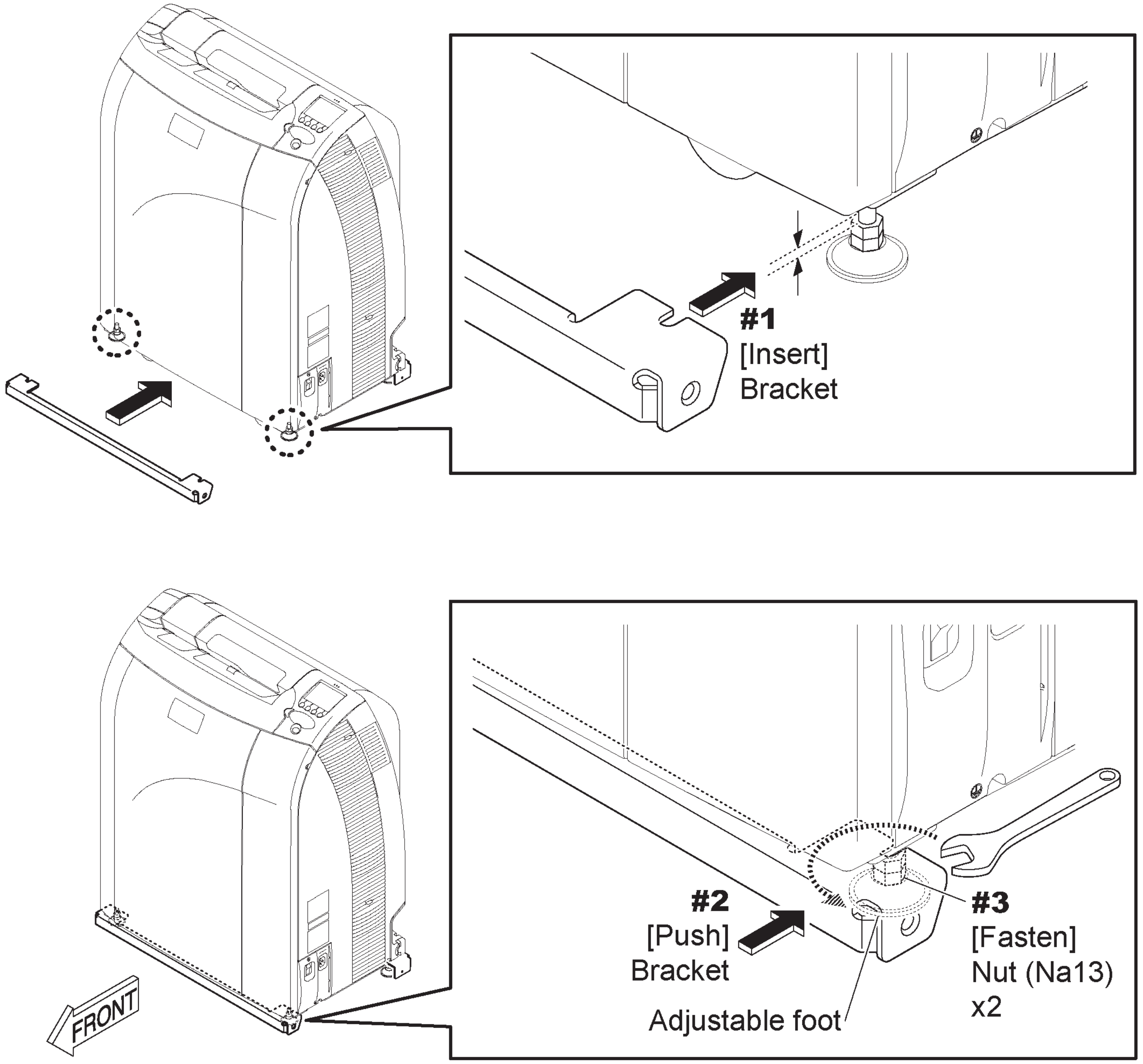

Pin
Rear bracket
Pin
Front bracket
FRONT


#1
[Insert]
Bracket
#2
[Push]
Bracket
#3
[Fasten]
Nut (Na13) x2
Adjustable foot
FRONT
FRCH7212.EPS

3. **Insert the front bracket from the front of the machine between the nut of the adjustable foot and the bottom of the machine. While pushing the bracket against the machine, fasten the nut of the adjustable foot for retaining.**

◆ NOTES ◆

- *Be sure to fasten the nut while pushing the bracket against the machine. If the bracket is pushed insufficiently, the machine may not be able to be properly retained.*
- *When fastening the nut of the adjustable foot, exercise care not to cause an aperture between the two nuts. The bracket might not be able to be properly retained.*

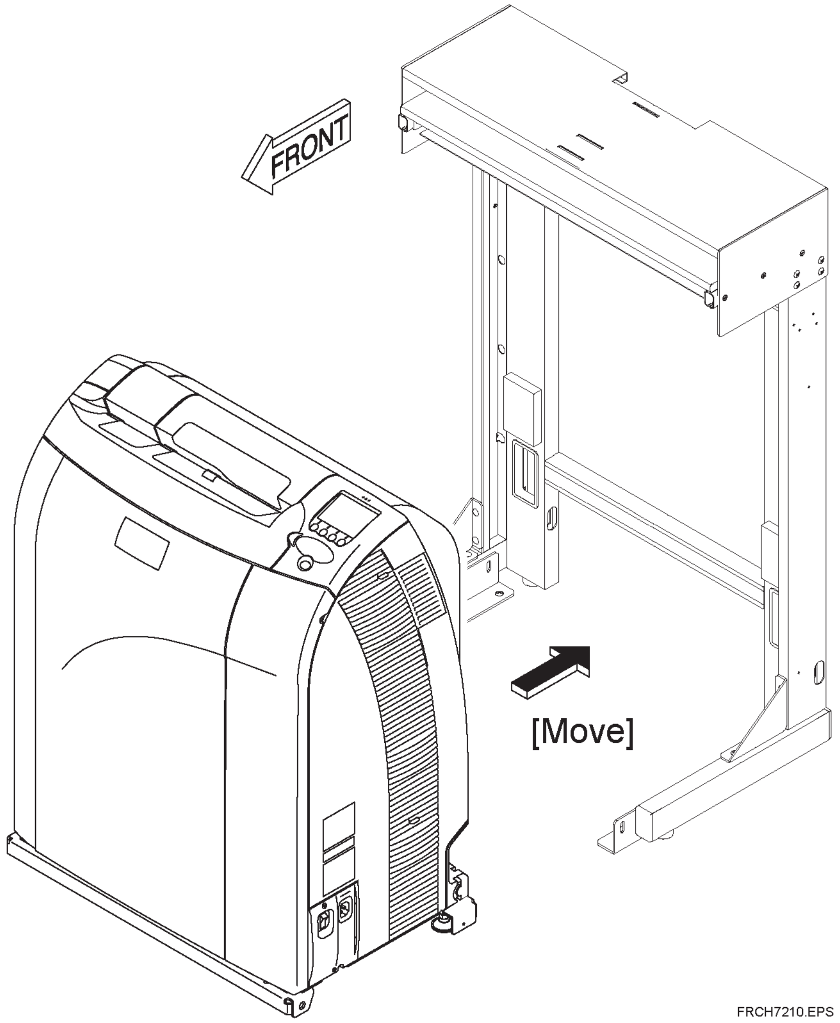


FRCH7213.EPS

4. **Move the machine into the supporter.**

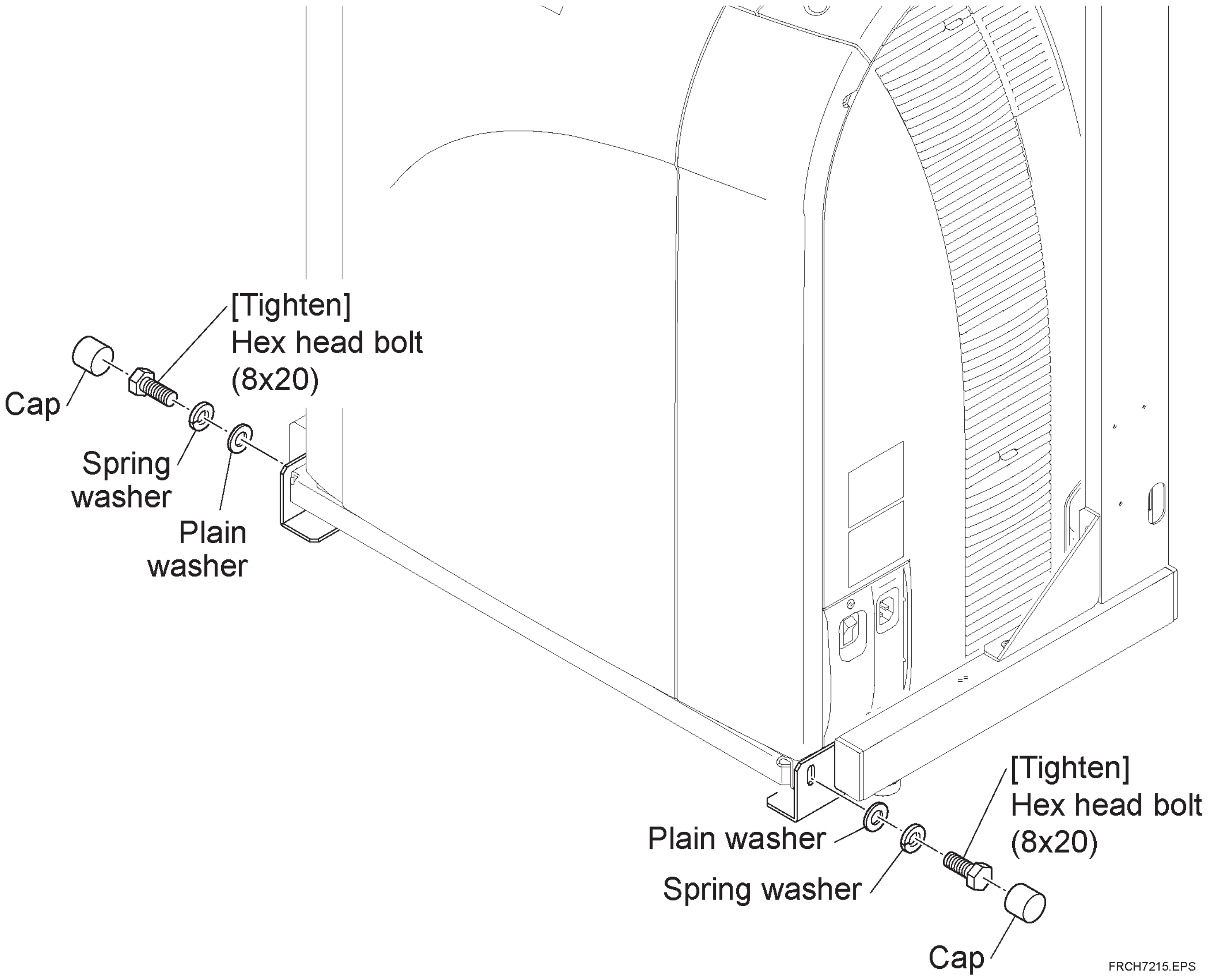
⚠ CAUTION

When pushing the machine into the supporter or pulling the machine out of the supporter, exercise care so that your fingers and other parts of your body are not caught between the supporter and machine.



FRCH7210.EPS

5. **Install the hex head bolts.**


[Tighten]
Hex head bolt
(8x20)
Cap
Spring
washer
Plain
washer
[Tighten]
Hex head bolt
(8x20)
Plain washer
Spring washer
Cap
FRCH7215.EPS

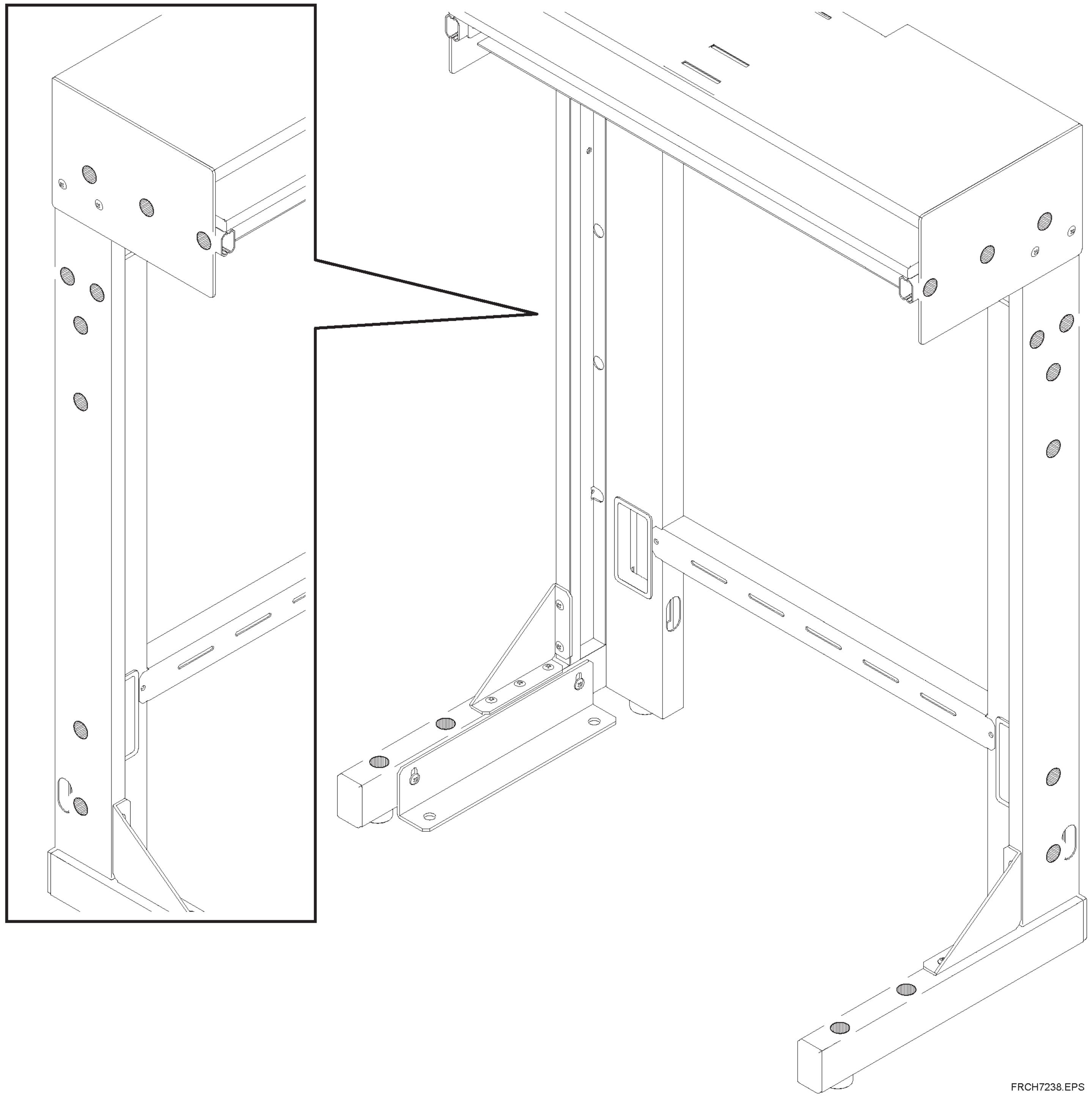
6. Applying the Seal

1. **Apply the seals to the screw holes on the supporter.**

◇ *REFERENCE* ◇

The number of seals to be applied depends on whether an optional part has been mounted. The locations where the seals might be applied are shown below.

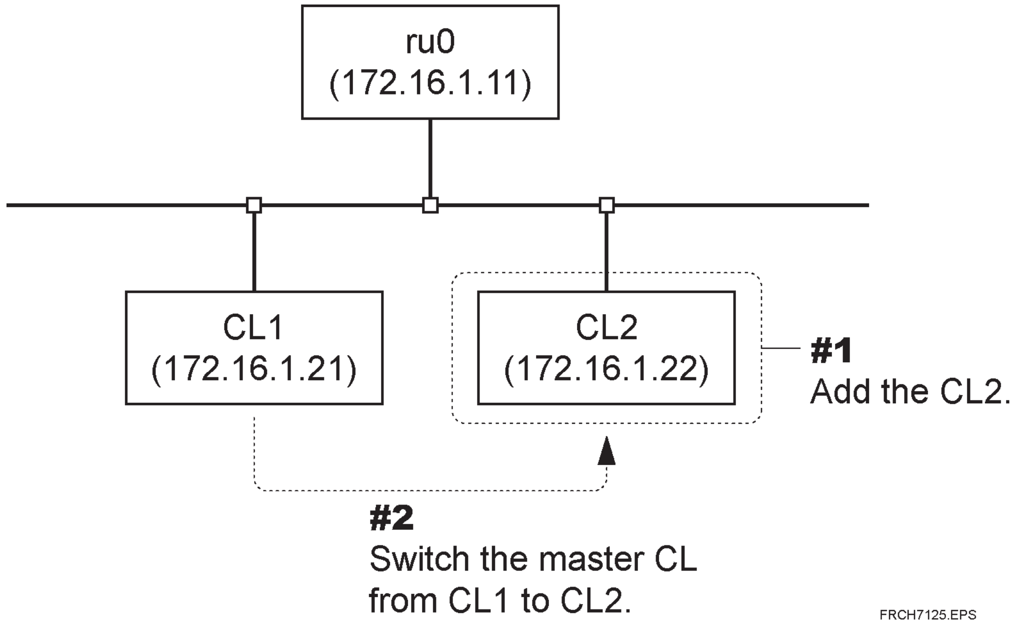
● : Locations of the seals



7. Nothing

Appendix 4. Setting the Master CL

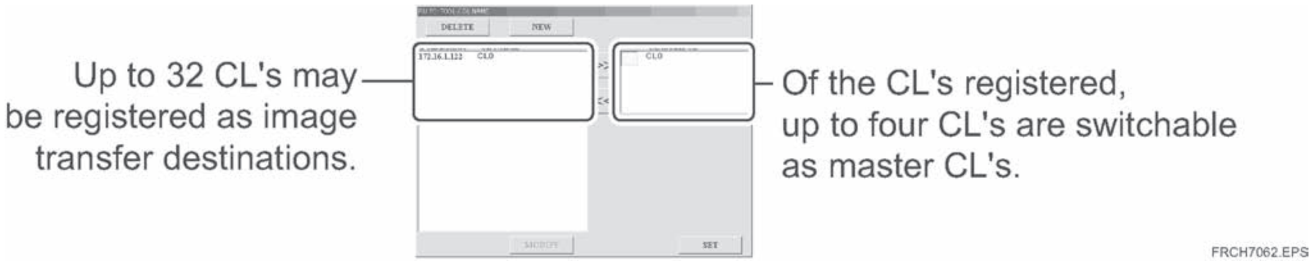
This section describes the procedures for additionally register the CL2 (172.16.1.22) into the system that consists of the RU (ru0: 172.16.1.11) and CL1 (master CL: 172.16.1.21), and for switching the master CL from CL1 to CL2.


ru0
(172.16.1.11)
CL1
(172.16.1.21)
CL2
(172.16.1.22)
#1
Add the CL2.
#2
Switch the master CL from CL1 to CL2.

FRCH7125.EPS

◇ REFERENCE ◇

Up to 32 CR Console's may be registered as image transfer destinations. Of the CR Console's registered, up to four CR Console's are switchable as master CL's.


Up to 32 CL's may be registered as image transfer destinations.
Of the CL's registered, up to four CL's are switchable as master CL's.
DELETE
NEW
SET

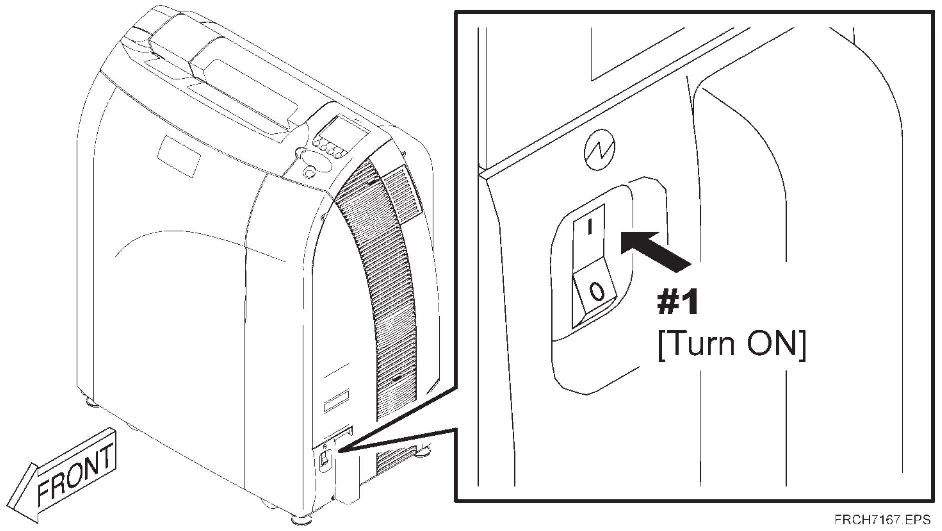
FRCH7062.EPS

For more detail about the function that may be set on the "EDIT CL NAME" screen, see "4.14 EDIT CL NAME" of the Maintenance Utility volume.

☞ ***{MU:4.14_EDIT CL NAME}***

1. Additionally Registering the Master CL (Procedures on the CL1)

1. **Turn ON the power of the CR Console.**
2. **Turn ON the circuit breaker of the RU.**


#1
[Turn ON]
FRONT

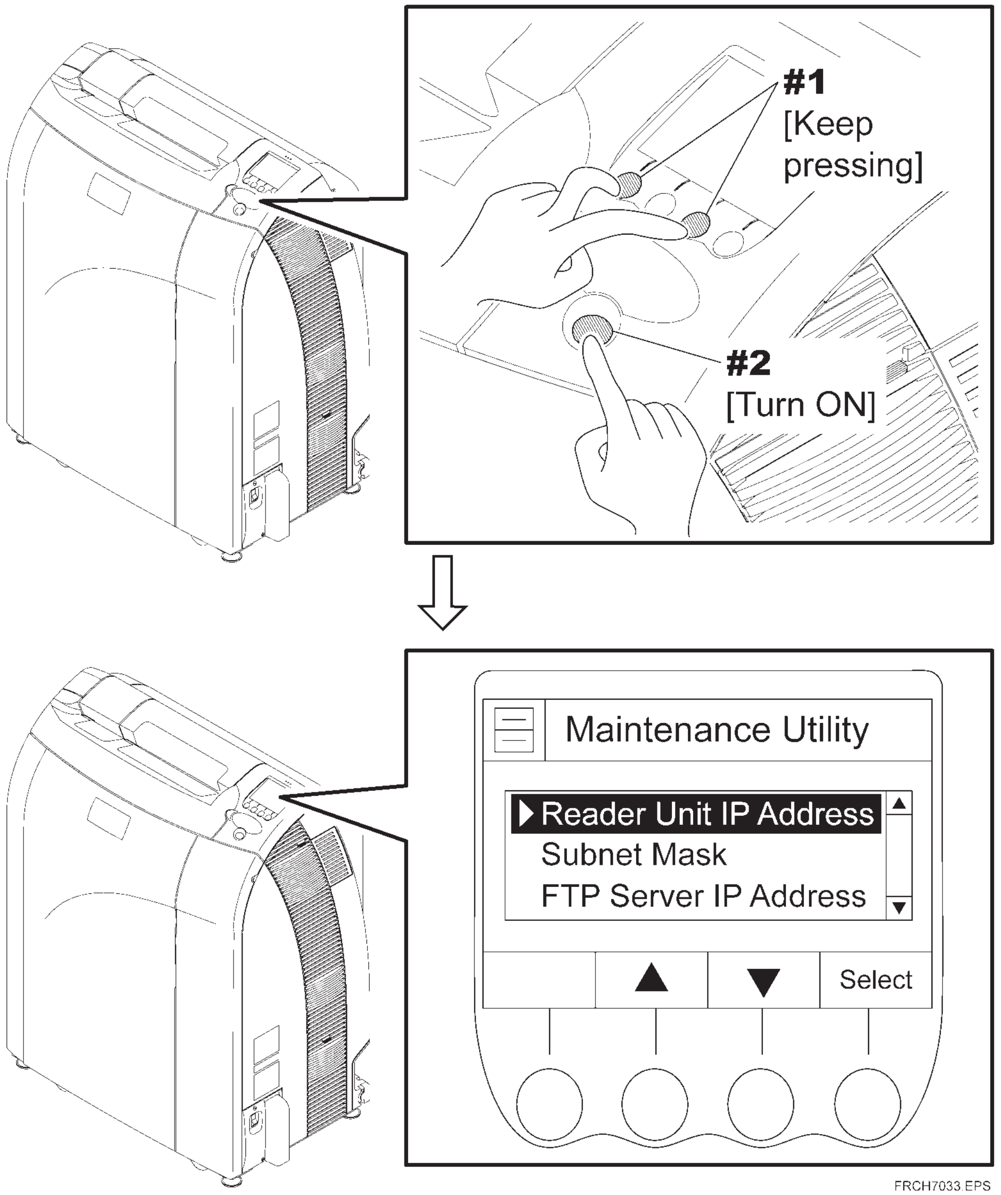
FRCH7167.EPS

3. **Start up the Machine Maintenance Utility of the RU.**

Turn ON the RU power while pressing the first and third buttons from the left on the operation panel. Keep pressing the first and third buttons from the left until the “Maintenance Utility” window appears on the operation panel.

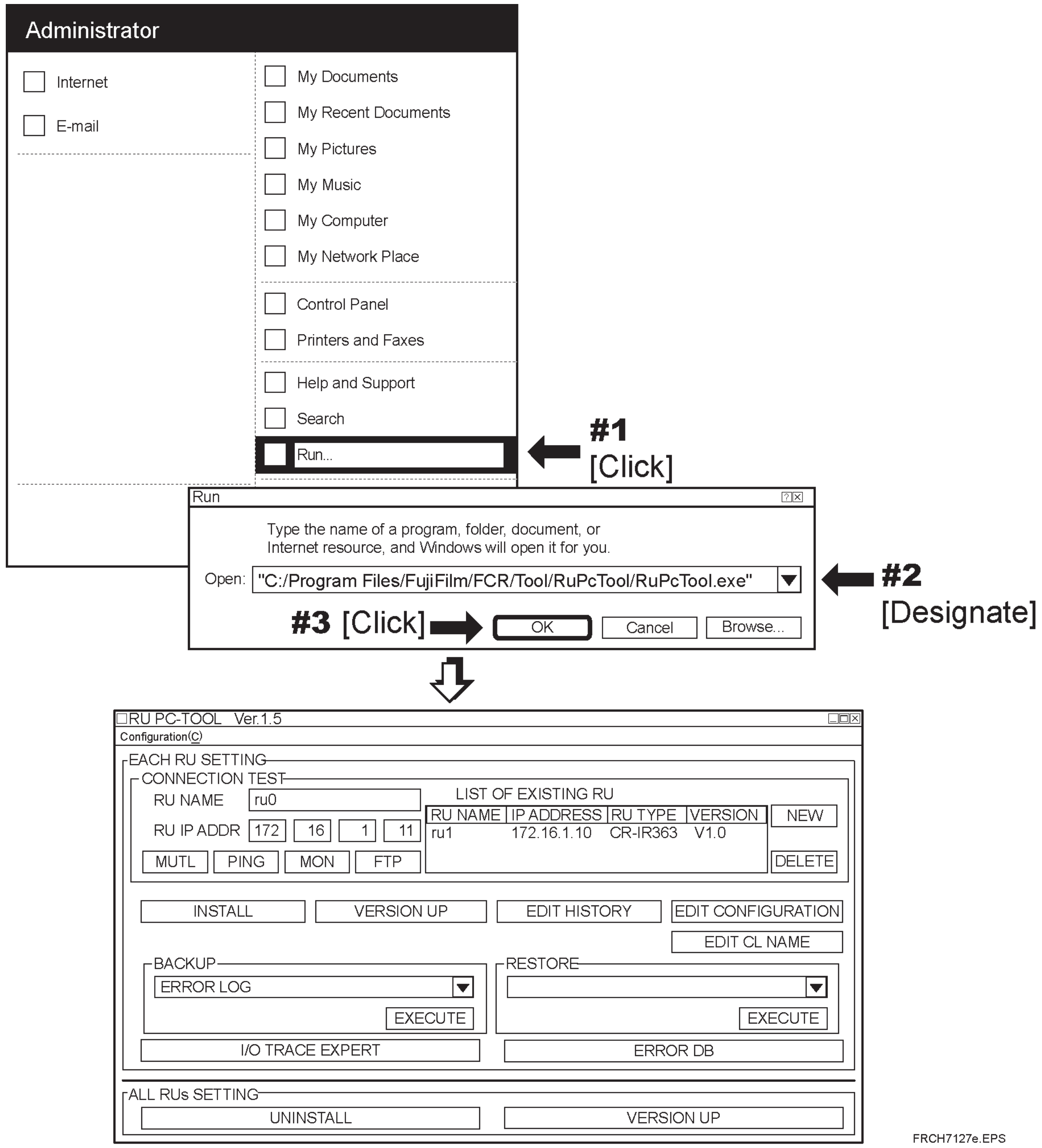
◆ **NOTE** ◆

Be sure to keep pressing the first and third buttons from the left until the “Maintenance Utility” window appears on the operation panel. If the “Maintenance Utility” window does not appear and the RU starts to boot up, once turn OFF the RU power and repeat from the procedure 1.


#1
[Keep pressing]
#2
[Turn ON]
Maintenance Utility
Reader Unit IP Address
Subnet Mask
FTP Server IP Address
▲
▼
Select

FRCH7033.EPS

4. **Select [Run...] from the Start menu of Windows. When the dialog opens, type ["C:\Program Files\FujiFilm\FCR\TOOL\RuPcTool\RuPcTool.exe"] and click on the [OK] button.**


Administrator
Internet
E-mail
My Documents
My Recent Documents
My Pictures
My Music
My Computer
My Network Place
Control Panel
Printers and Faxes
Help and Support
Search
Run...
#1
[Click]
Run
#2
[Designate]
#3 [Click]
OK
Cancel
Browse...
RU PC-TOOL Ver.1.5
Configuration(C)
EACH RU SETTING
CONNECTION TEST
MUTL
PING
MON
FTP
NEW
DELETE
INSTALL
VERSION UP
EDIT HISTORY
EDIT CONFIGURATION
EDIT CL NAME
BACKUP
RESTORE
EXECUTE
EXECUTE
I/O TRACE EXPERT
ERROR DB
ALL RUs SETTING
UNINSTALL
VERSION UP

Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.

Open: "C:/Program Files/FujiFilm/FCR/Tool/RuPcTool/RuPcTool.exe"

RU NAME: ru0

RU IP ADDR: 172 16 1 11

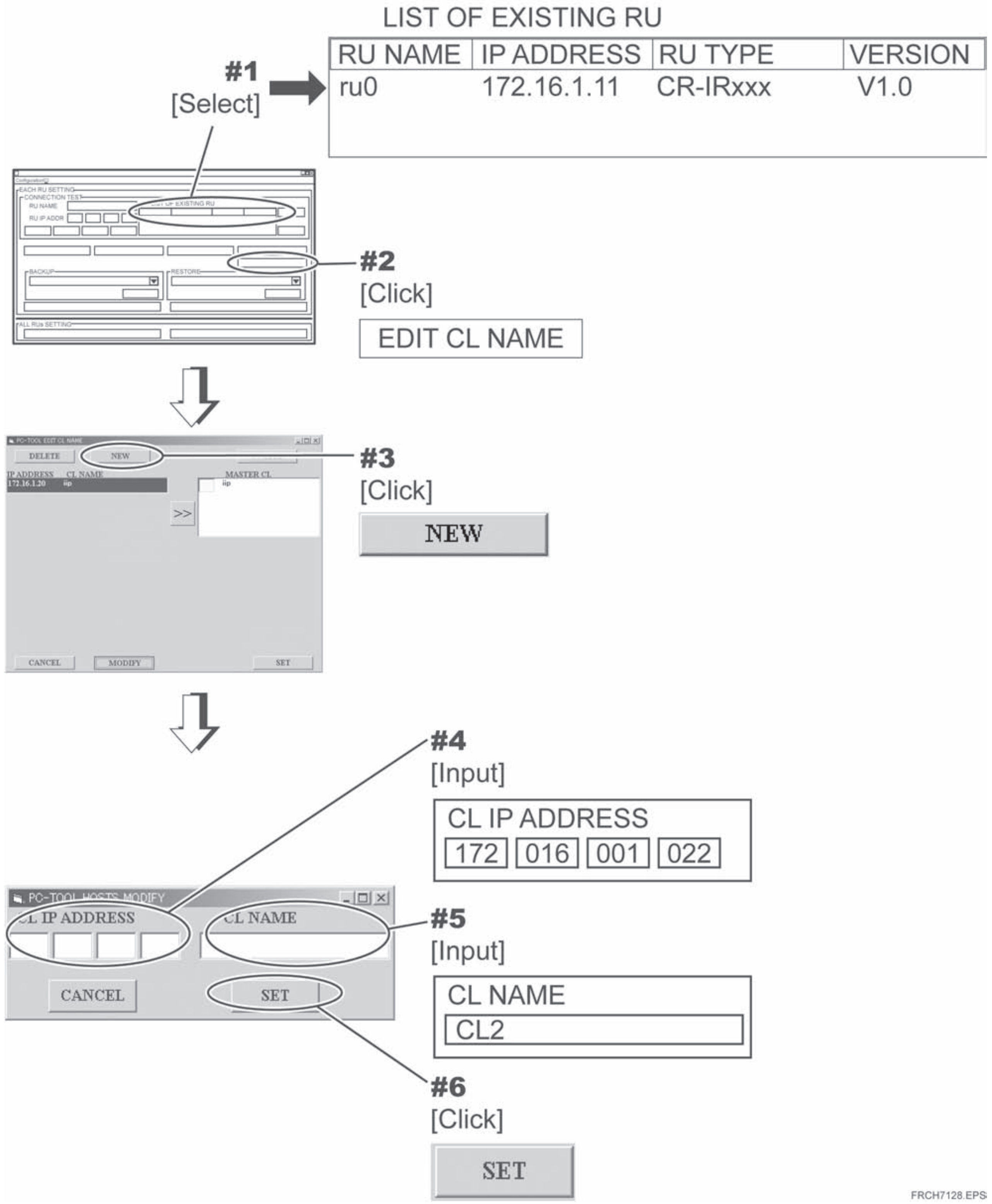
BACKUP: ERROR LOG

LIST OF EXISTING RU

RU NAME	IP ADDRESS	RU TYPE	VERSION
ru1	172.16.1.10	CR-IR363	V1.0

FRCH7127e.EPS

5. **From "LIST OF EXISTING RU", select a RU where the master CL is to be added, and enter the "IP ADDRESS" and "CL NAME" of the master CL to be added.**



LIST OF EXISTING RU

RU NAME	IP ADDRESS	RU TYPE	VERSION
ru0	172.16.1.11	CR-IRxxx	V1.0

CL IP ADDRESS

172 016 001 022

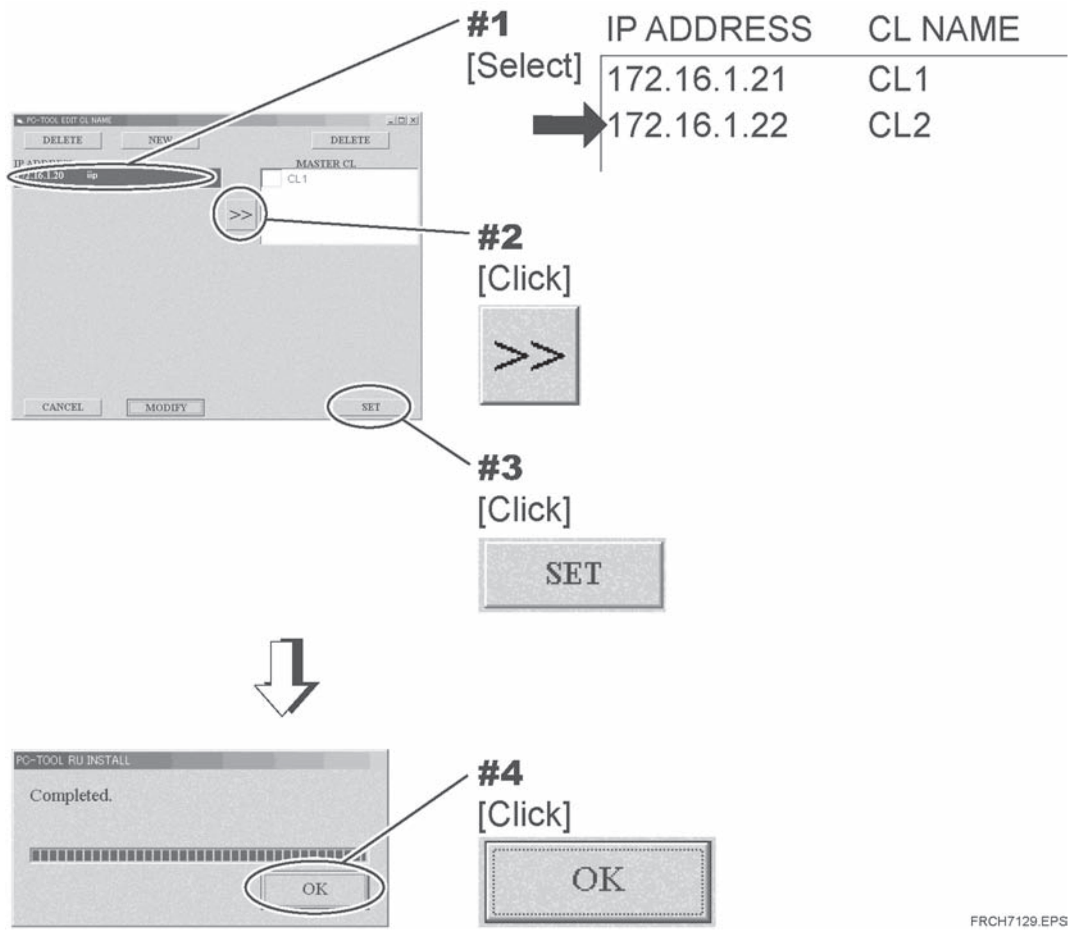
CL NAME

CL2

#1
[Select]
#2
[Click]
EDIT CL NAME
#3
[Click]
NEW
#4
[Input]
#5
[Input]
#6
[Click]
SET
PC-TOOL HOSTS MODIFY
CL IP ADDRESS
CL NAME
CANCEL
SET

FRCH7128.EPS

6. **Register the master CL (CL2) created at procedure 5 into the master CL.**



IP ADDRESS	CL NAME
172.16.1.21	CL1
172.16.1.22	CL2

PC-TOOL RU INSTALL

Completed.

#1
[Select]
#2
[Click]
>>
#3
[Click]
SET
#4
[Click]
OK
DELETE
NEW
MASTER CL
CANCEL
MODIFY

FRCH7129.EPS

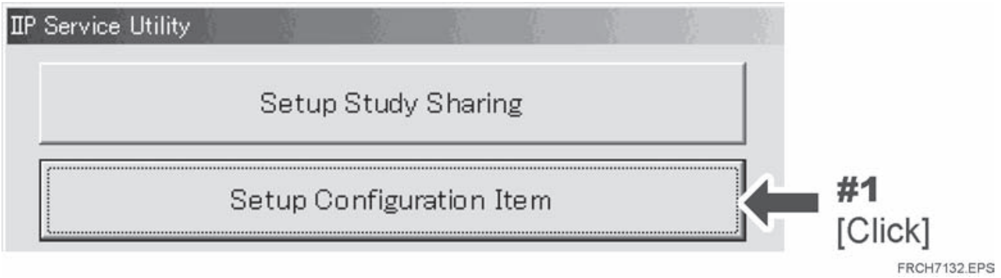
7. **Close the RU PC-TOOL window.**

2. Registering the RU (Procedures on the CL2)

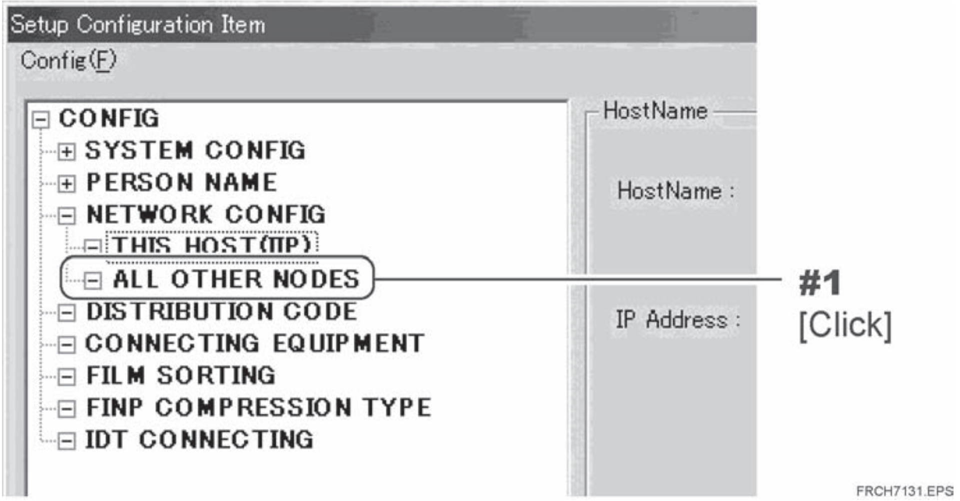
1. **Start the Service Utility.**

☞ **{FCR XG-1/CR CL Service Manual/Maintenance Utility (MU)/1. Starting and Exiting the Service Utility}**

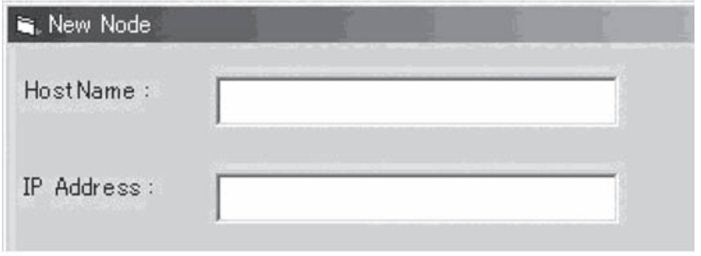
2. **Click on [Setup Configuration Item].**


IIP Service Utility
Setup Study Sharing
Setup Configuration Item
#1
[Click]
FRCH7132.EPS

3. **Click on [ALL OTHER NODES] of [NETWORK CONFIG].**


Setup Configuration Item
Config(F)
⊟ CONFIG
⊞ SYSTEM CONFIG
⊞ PERSON NAME
⊟ NETWORK CONFIG
⊟ THIS HOST(IP)
⊟ ALL OTHER NODES
⊟ DISTRIBUTION CODE
⊟ CONNECTING EQUIPMENT
⊟ FILM SORTING
⊟ FINP COMPRESSION TYPE
⊟ IDT CONNECTING
HostName
HostName :
IP Address :
#1
[Click]
FRCH7131.EPS

4. **Click on New .**

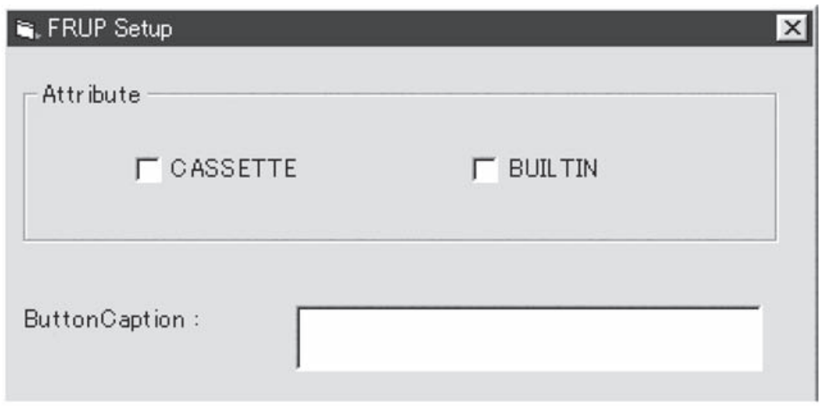

New Node
HostName :
IP Address :
FRCH7130.EPS

→ The "New Node" dialog box appears.

5. **Enter the host name (ru0) of the RU in HostName : and its IP address (172.16.1.11) in IP Address : .**

6. **Select ● FRUP in the "Add Node" field, and click on OK .**

→ The "FRUP Setup" screen appears.


FRUP Setup
Attribute
☐ CASSETTE
☐ BUILTIN
ButtonCaption :
FRCH7133.EPS

7. **Check ☑ CASSETTE in the "Attribute" field (☐ → ☑).**

8. **Type "ru0" in ButtonCaption : .**

◇ *REFERENCE* ◇

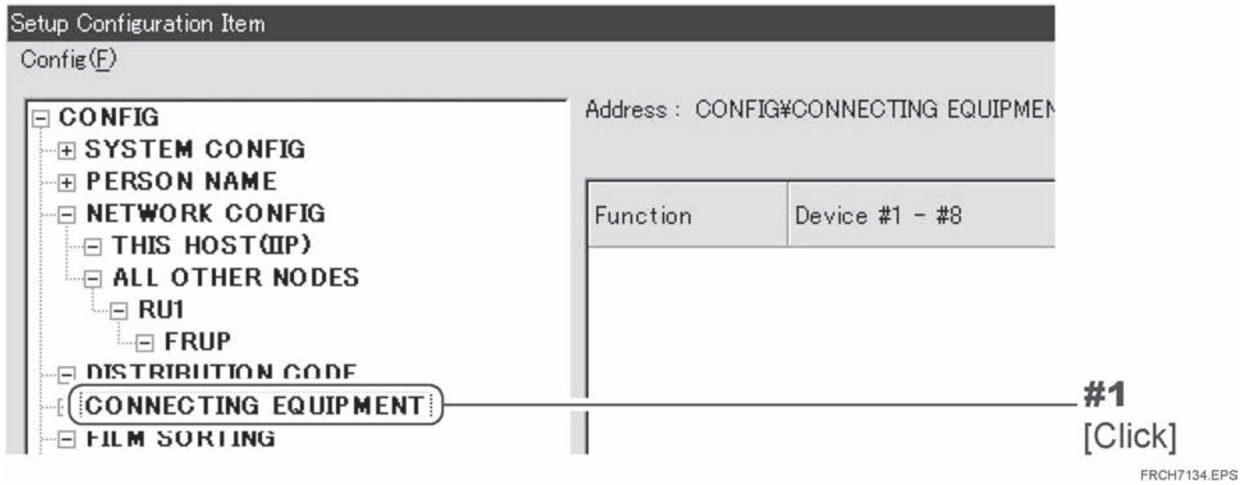
The name should not necessarily be the same as the host name.

9. **Click on OK .**

→ Registering the network information is now completed.

3. Registering the Machine Information (CONNECTING EQUIPMENT)

1. **Click on [CONNECTING EQUIPMENT] in the "Setup Configuration Item" window.**


Setup Configuration Item
Config(F)
CONFIG
SYSTEM CONFIG
PERSON NAME
NETWORK CONFIG
THIS HOST(IIP)
ALL OTHER NODES
RU1
FRUP
DISTRIBUTION CODE
CONNECTING EQUIPMENT
FILM SORTING
Function
Device #1 - #8
FRCH7134.EPS

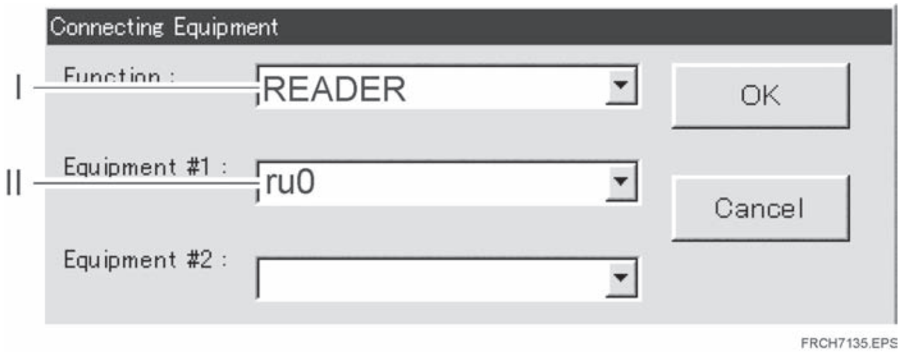
Address : CONFIG¥CONNECTING EQUIPMEN

#1
[Click]

2. **Click on** New **.**

→ The "Connecting Equipment" dialog box appears.

3. **Register the machine information as shown below.**


Connecting Equipment
I
II
OK
Cancel
FRCH7135.EPS

Function : READER
Equipment #1 : ru0
Equipment #2 :

I. Select "Reader".
II. Select the host name (e.g., ru0).
III. If several RU's are connected, select the second and subsequent host name(s) in "Equipment #2" and so on.

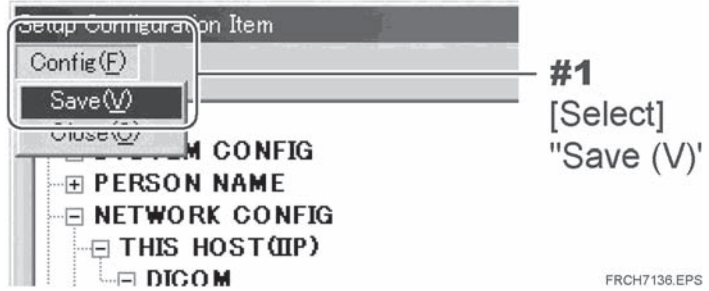
4. **Click on** OK **.**

→ Registering the machine information is now completed.

The "Setup Configuration Item" window appears back on screen.

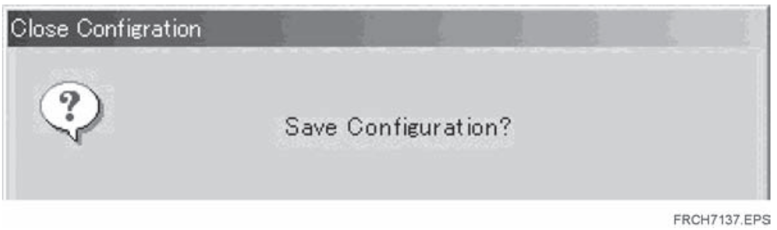
4. Saving Configuration and Exiting Service Utility

1. **From the "Config (F)" menu in the "Setup Configuration Item" window, select "Save (V)".**


Setup Configuration Item
Config(F)
Save(V)
Close(C)
SYSTEM CONFIG
PERSON NAME
NETWORK CONFIG
THIS HOST(IIP)
DICOM
FRCH7136.EPS

#1
[Select]
"Save (V)'

→ The save confirmation window appears.


Close Configration
FRCH7137.EPS

Save Configuration?

2. **Click on** Yes **.**

→ The setup is saved.

3. **From the "Config (F)" menu, select "Close (C)".**

→ The "Service Utility" window appears back on screen.

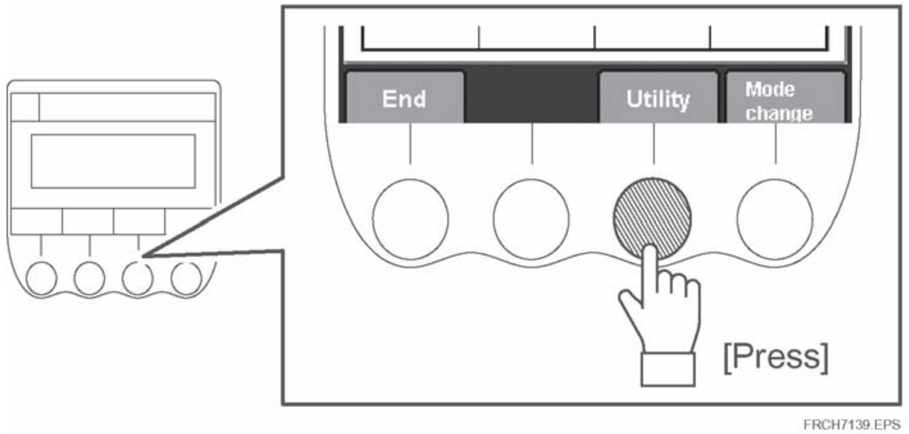
4. **Exit the Service Utility.**

5. Verifying Switching of Master CL

1. **Turn OFF the power of the RU.**

2. **Turn ON the power of the RU.**

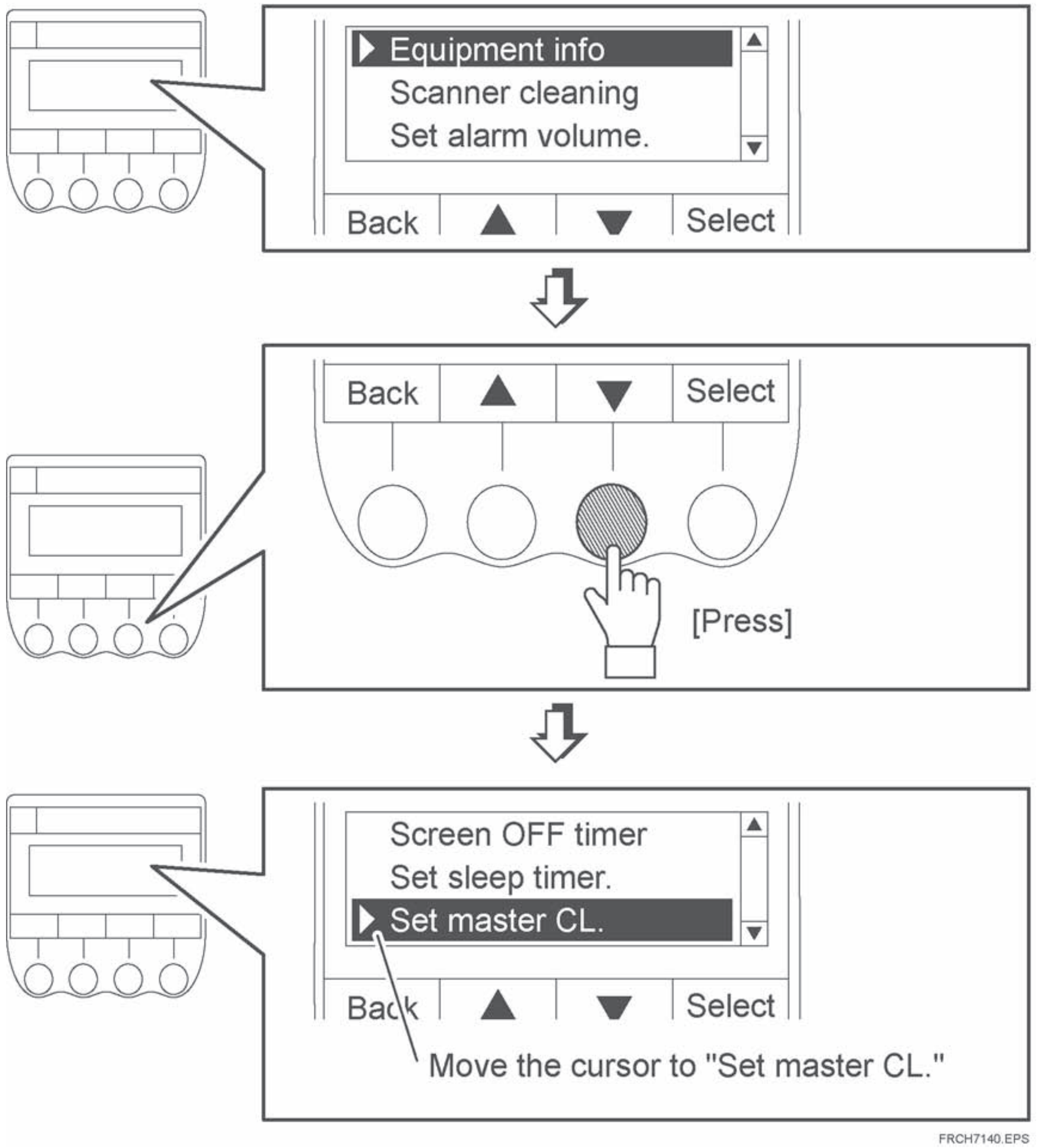
3. **Press the [Utility] button on the operation panel.**


End
Utility
Mode change
[Press]

FRCH7139.EPS

→ The “Utility” window appears.

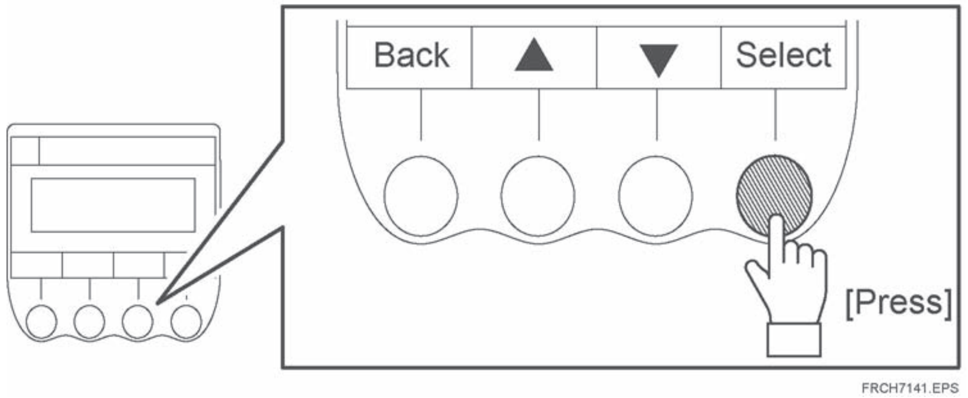
4. **Press the ▼ button, and select “Set master CL”.**


Equipment info
Scanner cleaning
Set alarm volume.
Back
▲
▼
Select
[Press]
Screen OFF timer
Set sleep timer.
Set master CL.

Move the cursor to "Set master CL."

FRCH7140.EPS

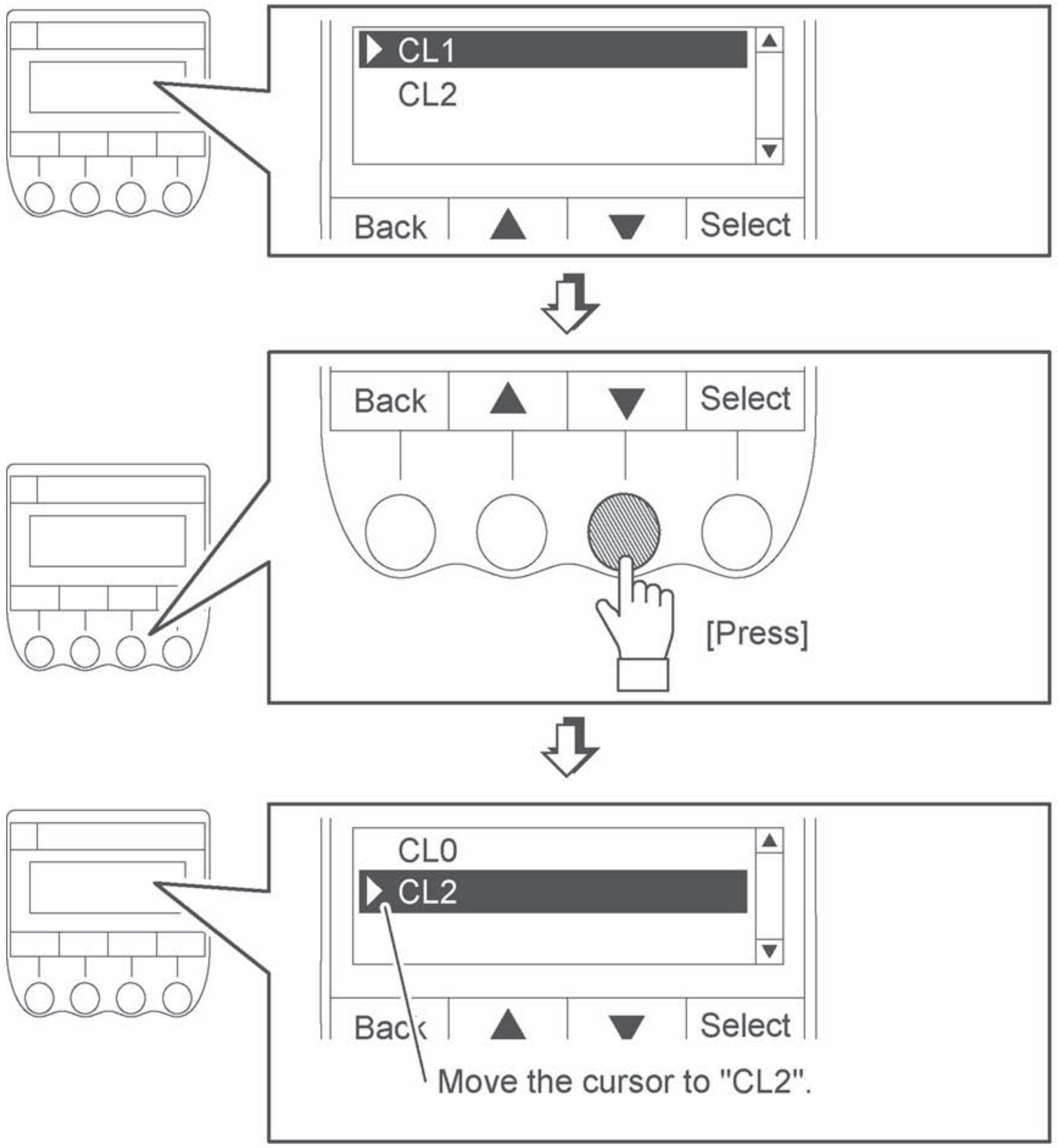
5. **Press the [Select] button.**


Back
▲
▼
Select
[Press]

FRCH7141.EPS

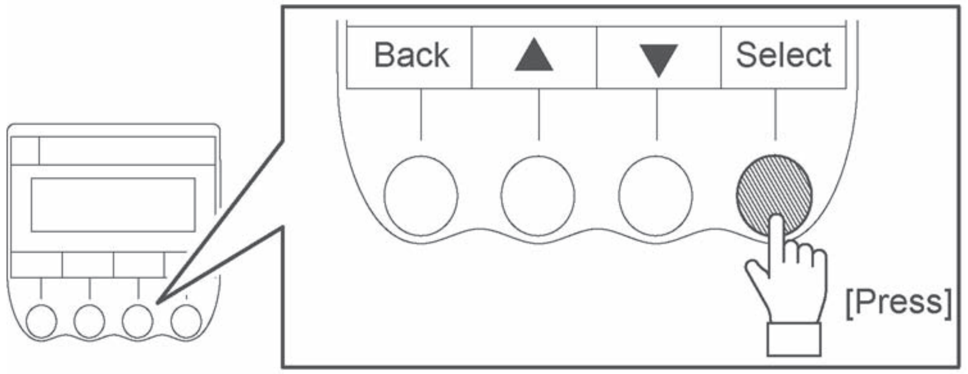
→ The “Select master Console” window appears.

6. **Press the ▼ button, and select “CL2”.**


CL1
CL2
Back
▲
▼
Select
[Press]
CL0
CL2
Move the cursor to "CL2".

FRCH7142.EPS

7. **Press the [Select] button.**


Back
▲
▼
Select
[Press]

FRCH7141.EPS

◇ *REFERENCE* ◇

The power of the RU automatically turns OFF about 1 minute after the master CL is set.

8. **Turn ON the power of the RU.**

9. **Perform reading, and make sure that the image is transferred to the master CL.**

Appendix 5. Changing the RU's IP Address

This appendix describes the procedure for using the machine with the RU's IP address changed.

1. Starting the machine Maintenance Utility

1. **Start the machine Maintenance Utility as directed under "8.1 Starting the Machine Maintenance Utility."**

   ☞ **{IN:8.1_Starting the machine Maintenance Utility}**

2. Setting the RU's IP address

1. **Change the RU's IP address as directed under "8.2 Setting the IP Address of the RU."**

   ☞ **{IN:8.2_Setting the IP Address of the RU}**

3. Setting the FTP server IP address

1. **Change the RU's FTP server IP address as directed under "8.3 Setting the IP Address of the FTP Server."**

   ☞ **{IN:8.3_Setting the FTP server IP address}**
2. **Reinstall the RU software as directed under "Appendix 6. Reinstalling the RU Software."**

◆ *INSTRUCTION* ◆

After the RU's IP address is changed, be sure to reinstall the RU software.

☞ ***{IN: Appendix 6._Reinstalling the RU Software}***

Appendix 6. Reinstalling the RU Software

This appendix describes the RU software reinstallation procedure that is performed when, for instance, the machine is to be used with the RU's IP address changed or the RU to be installed is improperly set up.

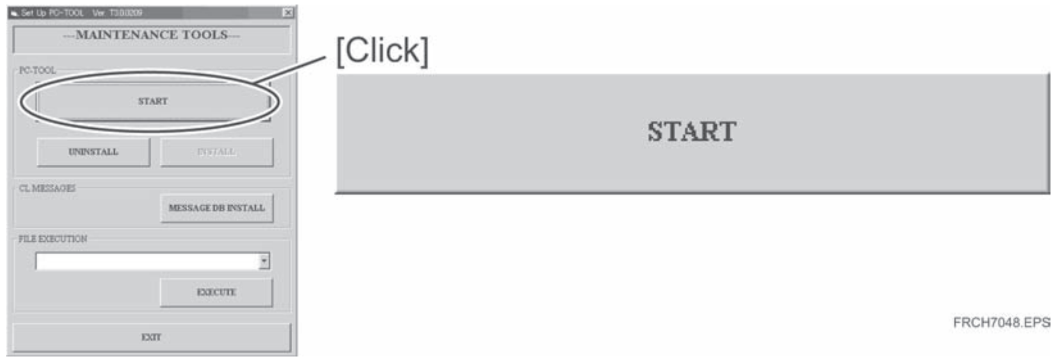
To reinstall the RU software, first delete the RU registered in the RU PC-TOOL, and then install the RU software.

1. Deleting an Installed RU

1. Insert the RU-APL CD-ROM into the CR Console.

→ The "Set Up PC-TOOL" window automatically opens.

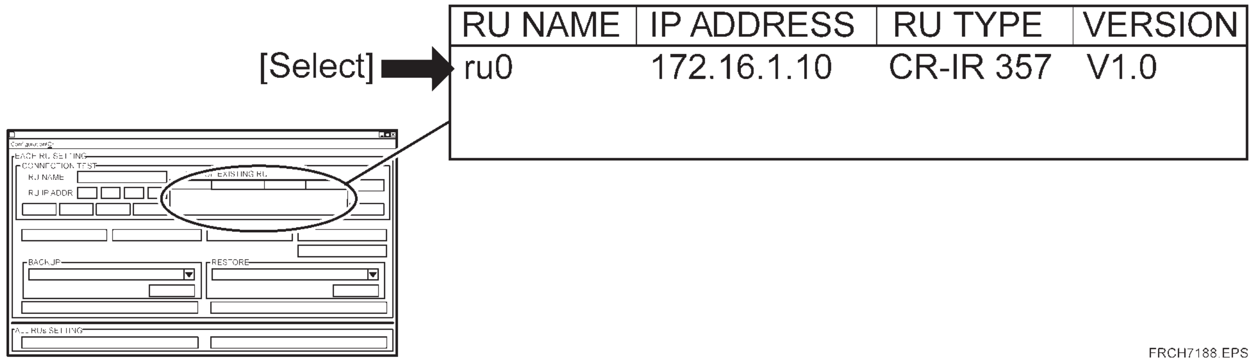
2. Click on [START].


Set Up PC-TOOL Ver. T3.0.0209
---MAINTENANCE TOOLS---
PC-TOOL
START
UNINSTALL
INSTALL
CL MESSAGES
MESSAGE DB INSTALL
FILE EXECUTION
EXECUTE
EXIT
[Click]
START

FRCH7048.EPS

→ The "RU PC-TOOL" window opens.

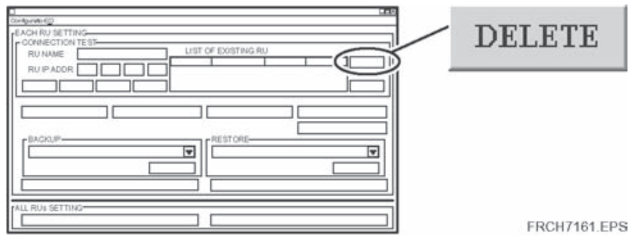
3. From "LIST OF EXISTING RU," select an RU.


[Select]
Configuration(C)
EACH RU SETTING
CONNECTION TEST
RU NAME
RU IP ADDR
LIST OF EXISTING RU
BACKUP
RESTORE
ALL RUs SETTING

RU NAME	IP ADDRESS	RU TYPE	VERSION
ru0	172.16.1.10	CR-IR 357	V1.0

FRCH7188.EPS

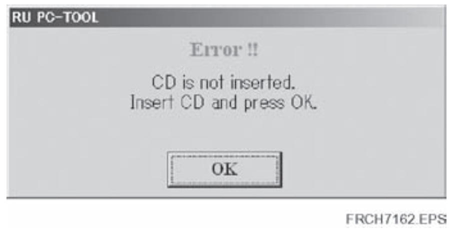
4. Click on [DELETE].


Configuration(C)
EACH RU SETTING
CONNECTION TEST
RU NAME
RU IP ADDR
LIST OF EXISTING RU
BACKUP
RESTORE
ALL RUs SETTING
DELETE

FRCH7161.EPS

◆ NOTE ◆

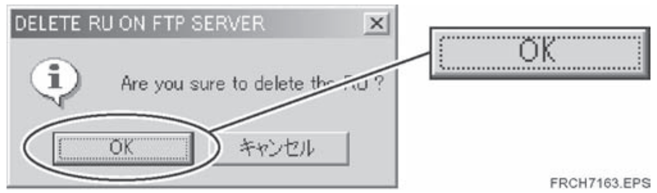
If you click [DELETE] without inserting the RU-APL CD-ROM into the CR Console, the following error message appears. If the error message appears, insert the RU-APL CD-ROM into the CR Console and then repeat steps 2 and beyond.


RU PC-TOOL
OK

Error !!
CD is not inserted.
Insert CD and press OK.

FRCH7162.EPS

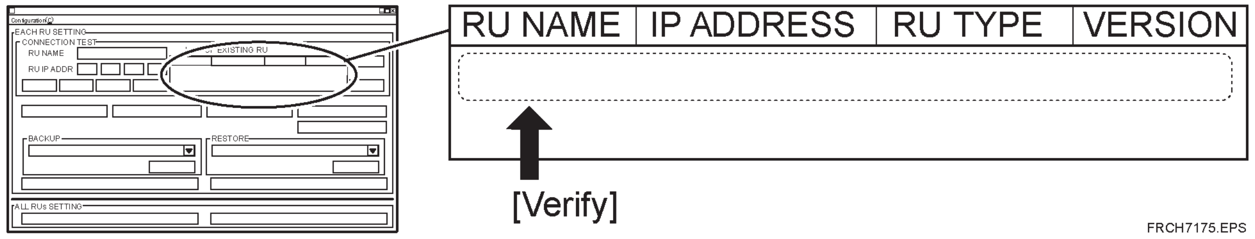
5. Click on [OK].


DELETE RU ON FTP SERVER
OK
キャンセル
OK

Are you sure to delete the RU ?

FRCH7163.EPS

6. Verify that the RU selected in step 3 is deleted from "LIST OF EXISTING RU."


Configuration(C)
EACH RU SETTING
CONNECTION TEST
RU NAME
RU IP ADDR
LIST OF EXISTING RU
BACKUP
RESTORE
ALL RUs SETTING
[Verify]

RU NAME	IP ADDRESS	RU TYPE	VERSION

FRCH7175.EPS

2. Reinstalling the RU Software

Reinstall the RU software.
For the RU software reinstallation procedure, see "Appendix 7. Installing the RU Software."

☞ **{IN: Appendix 7._Installing the RU Software}**

Appendix 7. Installing the RU Software

This appendix describes the procedure for installing the RU software.
Before installing the RU software, you have to run a network check from the RU's machine Maintenance Utility to verify the connection to the CR Console.

1. Verifying the connection to the CR Console

1. **Run a network check as directed under "8.4 Checking the Connection with the CR Console."**

☞ **{IN:8.4_Checking the Connection with the CR Console}**

2. Installing the RU PC-TOOL

◆ ***NOTE*** ◆

If the RU PC-TOOL is already installed on the CR console, the step below need not be performed. In such an instance, skip to "Appendix 7-3. Installing the RU software."

☞ ***{IN: Appendix 7-3_Installing the RU Software}***

1. **Install the RU PC-TOOL as directed under "8.5 Installing the RU PC-TOOL."**

☞ **{IN:8.5_Installing the RU PC-TOOL}**

3. Installing the RU Software

1. **Install the RU software as directed under "8.6 Installing RU Software."**

☞ **{IN:8.6_Installing RU Software}**

Appendix 8. Corrective Procedure to be Performed after Improper RU PC-TOOL Installation

If "For Client PC" is inadvertently chosen when the RU PC-TOOL is to be installed, install the RU PC-TOOL as directed below.

When the RU PC-TOOL installation procedure is improperly performed, use either of the following corrective procedures:

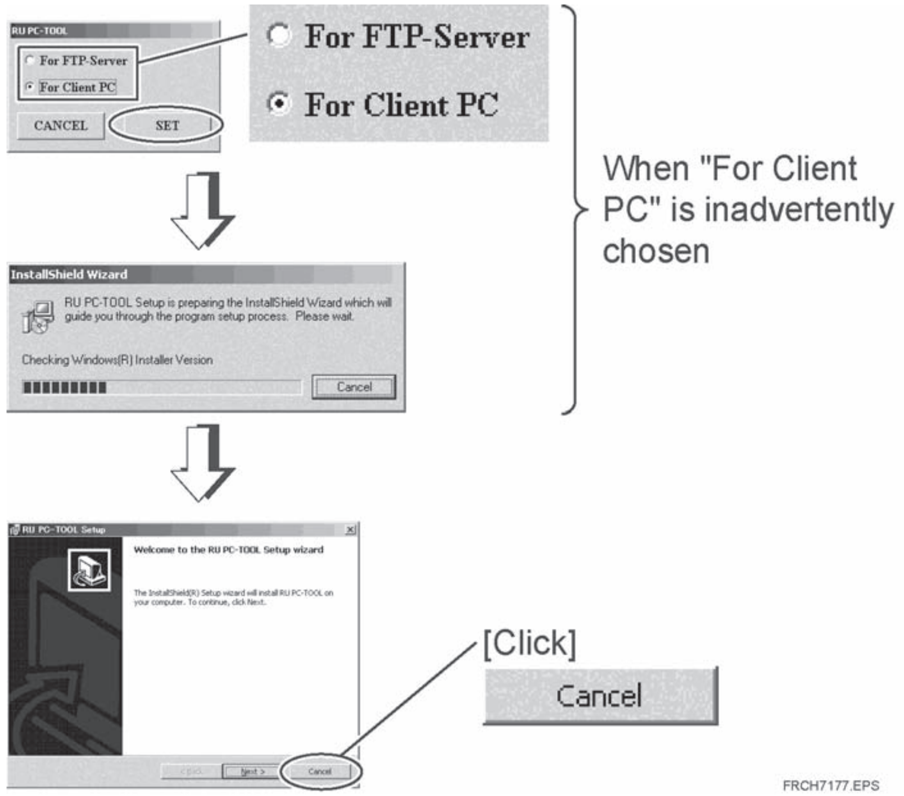
- **Abort the installation process and then perform the installation procedure again.**
  If you find in the middle of the RU PC-TOOL installation process that "For Client PC" is inadvertently chosen, you can abort the installation process.
  In this instance, abort the installation process and install the RU PC-TOOL. For details on the procedure, see "Appendix 8-1 Corrective Procedure 1."
  ☞ **{IN: Appendix 8-1_Corrective Procedure 1}**

- **Delete the CLIENT PC-TOOL and then perform the installation procedure again.**
  If you complete the RU PC-TOOL installation process with "For Client PC" inadvertently chosen, the CLIENT PC-TOOL is installed.
  In this instance, delete the CLIENT PC-TOOL with the RU-APL CD-ROM and then install the RU PC-TOOL. For details on the procedure, see "Appendix 8-2 Corrective Procedure 2."
  ☞ **{IN: Appendix 8-2_Corrective Procedure 2}**

1. Corrective Procedure 1

This section describes the procedure for aborting the installation process and installing the RU PC-TOOL.

1. **If you clicked [SET] with "For Client PC" chosen, click [Cancel] in a window that opens next.**


RU PC-TOOL
For FTP-Server
For Client PC
CANCEL
SET
For FTP-Server
For Client PC
When "For Client PC" is inadvertently chosen
InstallShield Wizard
Cancel
RU PC-TOOL Setup
< Back
Next >
Cancel
[Click]
Cancel

RU PC-TOOL Setup is preparing the InstallShield Wizard which will guide you through the program setup process. Please wait.

Checking Windows(R) Installer Version

Welcome to the RU PC-TOOL Setup wizard

The InstallShield(R) Setup wizard will install RU PC-TOOL on your computer. To continue, click Next.

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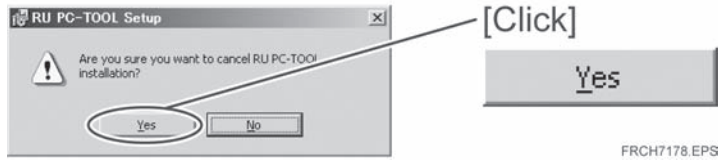
2. **When a message appears to ask whether you want to cancel the installation process, click [Yes].**


RU PC-TOOL Setup
Yes
No
[Click]
Yes

Are you sure you want to cancel RU PC-TOOl installation?

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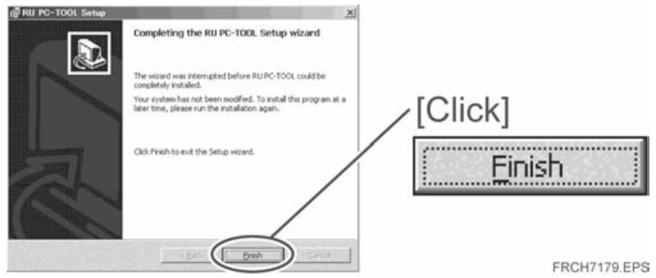
3. **Click on [Finish].**


RU PC-TOOL Setup
< Back
Finish
Cancel
[Click]
Finish

Completing the RU PC-TOOL Setup wizard

The wizard was interrupted before RU PC-TOOL could be completely installed.

Your system has not been modified. To install this program at a later time, please run the installation again.

Click Finish to exit the Setup wizard.

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4. **Install the RU PC-TOOL as directed under "Appendix 7-2 Installing the RU PC-TOOL."**

☞ **{IN: Appendix 7-2_Installing the RU PC-TOOL}**

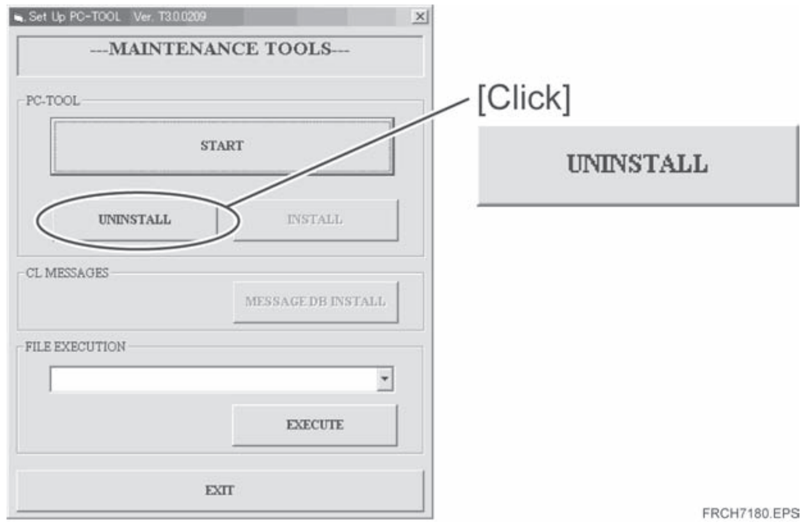
2. Corrective Procedure 2

This section describes the procedure for deleting the CLIENT PC-TOOL with the RU-APL CD-ROM and installing the RU PC-TOOL.

1. **If the CLIENT PC-TOOL is running, exit it.**
2. **Insert the RU-APL CD-ROM into the CR Console.**

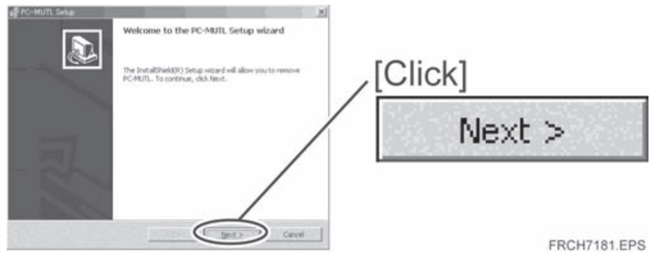
   → The "Set Up PC-TOOL" window automatically opens.

3. **Click on [UNINSTALL].**


Set Up PC-TOOL Ver. T3.0.0209
---MAINTENANCE TOOLS---
PC-TOOL
START
UNINSTALL
INSTALL
CL MESSAGES
MESSAGE.DB INSTALL
FILE EXECUTION
EXECUTE
EXIT
[Click]
UNINSTALL

FRCH7180.EPS

4. **Click on [NEXT].**



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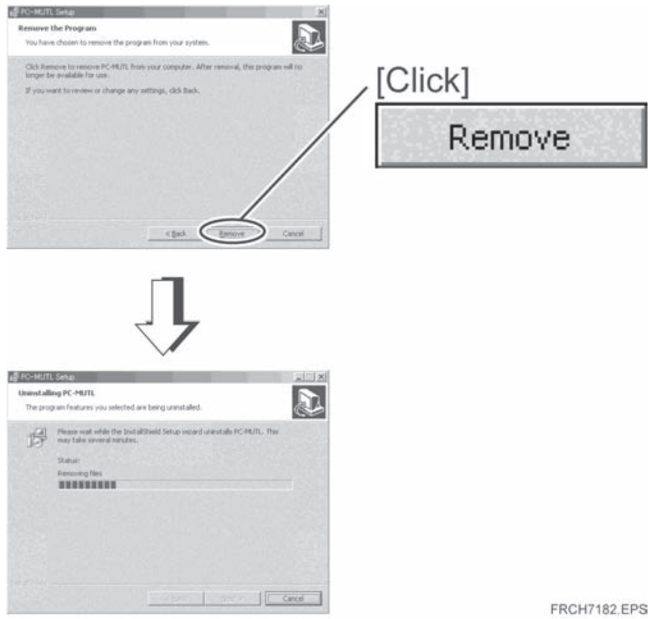
5. **Click on [Remove].**


[Click]
Remove

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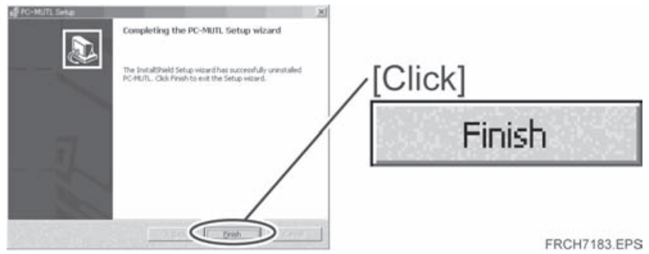
6. **When the uninstallation process is completed, click [Finish].**


[Click]
Finish

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7. **Install the RU PC-TOOL as directed under "Appendix 7-2 Installing the RU PC-TOOL."**

   ☞ **{IN: Appendix 7-2_Installing the RU PC-TOOL}**

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Control Sheet

Issue date	Revision number	Reason	Pages affected
11.10.2005	01	New release (FM4750)	All Pages

CR-IR 357 Service Manual

Performance Check (PC)

CR-IR 357 Performance Check List

The purpose of this performance check list is used at the time of CR-IR 357 installation to record the steps performed, measured values, and settings, which are based on the instructions set forth in the Service Manual. This checklist is not supposed to replace the installation steps set forth in the CR-IR 357 Service Manual but is to be followed concurrently. Verify the proper equipment operations at installation and after servicing by checking the system connection and output image quality (section 4 or later), and then pass the equipment over to the customer.

Installation Information

Serial Number: ________________
Site Name: ________________
Site Number: ________________
Room Name: ________________

Software Ver.: ____________________
Installed by: ____________________
Signature: ____________________
Installation Date/Servicing Date: ________

Checklist

1. Preparation for Installation

☞ **{IN:3._Preparation for Installation}**

- Checking the Items Supplied ☐ **OK** ☐ **NG**

Machine main body ☐
Accessories ☐
100-120V AC power cable (optional) ☐
Patient environment installation kit (optional) ☐
Anti-topple retainer kit (optional) ☐
Supporter (optional) ☐
Cassette rack (optional) ☐

2. Connecting the Cables

☞ **{IN:5._Connecting the Cables}**

- Supply voltage/machine power supply short-circuit check ☐ **OK** ☐ **NG**

Power supply voltage: ________V (specified value: 100V ± 10%)
Continuity check between E and E: ☐ (specified value: with continuity)
Resistance value measured between L and E: __________Ω (specified value: ∞Ω)
Resistance value measured between N and E:__________Ω (specified value: ∞Ω)
Resistance value measured between L and N: __________Ω (specified value: 100KΩ –)

3. Installing RU Software

☞ **{IN:8._Installing RU Software}**

- RU IP address: ______.______.______.______
- FTP server IP address: ______.______.______.______
- Identification code of the RU: ____________________________
- Software Version: ____________________________
- Backup of set file (machine-specific data) ☐ OK ☐ NG

4. Image/Conveyance Checks

☞ **{IN:9._Image/Conveyance Checks}**

- X-ray exposure information with a dose of ST IP ☐ OK ☐ NG

X-ray dose: ______ mR   S value: _____   Voltage: _______ kV
Tube current: ____ mA   Time: _______ msec   Distance: ______ cm
Exposure chamber: _____   Bulb No.: ____
Additional filter: Yes ☐ (AL:________mm, Cu: ________mm) No ☐
IP size: __________×__________   IP barcode No.: ________________

- Image/Conveyance Checks ☐ OK ☐ NG
- Image format check: white blank portion, ____ mm max. (specified value: 2 mm max.) ☐ OK ☐ NG

5. IP type and setup checks

- IP type used at the institution ☐ VN ☐ VI
- CONFIGURATION setup for the RU ☐ VN ☐ VI
- **Check that the IP used at the institution agrees with the CONFIGURATION setup for the RU.** ☐ **OK** ☐ **NG**

6. Summary test

☐ **OK** ☐ **NG**

7. Keep output films as the record of performance check

☐ **OK** ☐ **NG**

8. Test equipment used for the check

Test equipment: ____________   Model: _____________   S/N: _________________
Test equipment: ____________   Model: _____________   S/N: _________________
Test equipment: ____________   Model: _____________   S/N: _________________

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